



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 Centers, others & Connecting  
Roads at Habiganj District**



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

**Package Name: LGED/RIVER/HABI/21-22/GCCR-13**

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## ACRONYMS & 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 Habiganj District has been prepared for the sub-project titled “Improvement of Community Infrastructure, Growth Centers, others roads & Connecting Roads at Habiganj 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, Six (6) community infrastructures connecting roads in Habiganj District will be improved to provide safe and sustainable access to nearby flood shelters and essential social infrastructure. The roads are located in three upazilas- Habiganj Sadar (4 roads with total length of 9.80 km), Ajmiriganj (1 road with total length of 2.1 km), and Sayestaganj (1 road of 4.1 km length) Upazilas-which are characterized by rural settlements, agricultural landscapes, and periodic exposure to seasonal flooding.

These community roads play a crucial role in connecting local villages with educational institutions, health facilities, local markets, and most importantly flood shelters that serve as safe havens during natural disasters. Improving these roads will enhance mobility and ensure that communities can reach flood shelters quickly and safely during emergency events.

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.

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, slope protection, utility relocation, and installation of small culverts or cross-drainage structures where required. More specifically, the interventions as well as the overall physical features around the roads are given below:

- (i) Mahtabpur-Bonpuri Road (Road ID: 636025049)**  
The Mahtabpur–Bonpuri Road, located in Kakailcheo Union under Ajmiriganj Upazila, Habiganj District, extends for 2.10 km from Mahtabpur to Bonpuri. The road is proposed for improvement to a standard rural road width through RCC pavement from Ch. 0+000 to Ch. 2+100, along with U-drains at selected locations, CC block protection, and palisading at vulnerable sections. The alignment passes through Mahtabpur and Alipur villages, traversing low-lying haor landscapes, agricultural lands, scattered settlements, ditches, ponds, and a nearby river. A cemetery and a community clinic are located close to the road corridor. Construction activities may cause temporary soil disturbance, dust and noise generation, localized water pollution, and disruption to access for nearby residents.
- (ii) Rampur (DR)-Tegoria UP-Tangirghat Road (Road ID: 636443006)**  
This 3.405 km road, situated in Tegoria Union under Habiganj Sadar Upazila, connects Rampur, Aowura, Rojobpur, Rajnagar, and Tangirghat. The proposed improvement includes bituminous carpeting over the full project section, with rehabilitation of damaged pavement, bridge and culvert improvements, and extensive palisading at erosion-prone locations. The road passes through agricultural lands, settlements, ponds, canals, ditches, and riverine areas. Important roadside features include a cemetery, Eidgah, local bazar, and Tangirghat growth center. Given its proximity to water bodies and populated areas, construction may lead to temporary dust, noise, traffic disruption, water contamination, and safety risks to nearby communities.
- (iii) Titukhai-Chandpur-Mirzapur Road to Sahapur Bazar WAPDA Embankment Road (Road ID: 636444063)**  
Located in Richi and Lukra Unions under Habiganj Sadar Upazila, this 3.13 km road links Norshatpur, Chandpur, and surrounding communities. The proposed intervention includes bituminous carpeting over the designated sections, including rehabilitation of damaged HBB and paved portions. The alignment passes through agricultural lands, riverside areas, settlements, playgrounds, cemeteries, mosques, and bustling bazar sections. The road also provides direct access to Chandpur and adjacent flood shelter facilities. Construction activities may result in dust and noise emissions, temporary traffic congestion, access disruption, and risks to pedestrians, particularly near markets, mosques, and residential clusters.
- (iv) Dhariapur-Shujatpur Government Primary School Road (Road ID: 636445050)**  
The Dhariapur–Shujatpur Government Primary School Road, located in Dhariapur and Sujatpur Unions under Habiganj Sadar Upazila, is 2.115 km long and will be improved to a standard rural road width. The proposed works include pavement upgrading, drainage improvements, and slope protection at required locations. The road traverses Nijampur and adjoining settlements, passing through densely inhabited areas, agricultural lands, ponds, ditches, and canal-side sections. Important roadside features include a government primary school, madrasa complex, mosque, Eidgah, local bazar, and numerous residential properties. Construction activities may temporarily disrupt local access, generate dust and noise, and pose safety risks to schoolchildren, pedestrians, and nearby residents. Water bodies adjacent to the alignment may also be vulnerable to sedimentation and pollution.

**(v) Mojahar High School-Sail Jura Road (Road ID: 636445022)**

This 4.10 km road, located in Bramandora Union under Shayestaganj Upazila, connects Sailjura, Sherpur, and surrounding communities. The proposed improvement includes a combination of RCC and bituminous pavement, along with U-drain construction and culvert improvement at selected locations. The road passes through mixed land use areas comprising educational institutions, industrial facilities, agricultural lands, settlements, bazaars, mosques, and madrasas. Notable features include Mojahar High School, Pran-RFL School and College, Pran-RFL industrial facilities, Sailjura Bazar, and several residential clusters. Construction may result in temporary dust, noise, traffic congestion, and access restrictions, particularly near schools, factories, and market areas. There is also potential for occupational and community health and safety risks due to high pedestrian activity.

**(vi) Madna Road to Lakhai R&H Road via Bamkhandi (Road ID: 636445023)**

Located in Lukra Union under Habiganj Sadar Upazila, this 1.15 km road serves Bamkhandi and adjacent rural communities. The proposed intervention includes Uni-Block pavement throughout the entire length, culvert improvements, U-drain construction, and palisading at vulnerable sections. The alignment passes through settlement areas, agricultural lands, and drainage corridors. Existing roadside features include culverts, drainage channels, and low-lying lands susceptible to seasonal waterlogging. Construction activities may cause temporary dust and noise, localized soil disturbance, disruption to drainage, and short-term inconvenience to nearby residents. There is also potential risk of erosion and waterlogging if drainage paths are obstructed during construction.

Despite the substantial socio-economic benefits the project will bring, certain disturbances such as 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. Furthermore, the presence of a mobile workforce introduces potential risks related to Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH), which require careful management. 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 for dust suppression; proper maintenance of construction equipment to control noise and air emissions; and safe handling, storage, and disposal of construction materials, spoil, and wastes. Erosion and sediment control measures will be implemented, particularly near canals, ponds, culverts, bridge

sites, and slope protection areas, to prevent embankment instability, sedimentation, and contamination of nearby water bodies and agricultural lands, while maintaining natural drainage and stormwater flow. Disturbed areas will be reinstated upon completion of works, and any trees removed will be compensated through roadside plantation.

Comprehensive traffic and community safety measures, including warning signs, barricades, pedestrian crossings, and speed-calming devices, will be installed near schools, markets, mosques, graveyards, clinics, and settlement clusters. Special precautions will be taken during culvert, bridge, palisading, and slope protection works to ensure structural integrity and public safety. Contractors will also implement robust occupational health and safety measures, including provision of PPE, worker training, emergency preparedness, and strict site supervision throughout the construction period.

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 sub-project is expected to deliver substantial long-term benefits by improving connectivity between rural communities, flood shelters, markets, schools, and health facilities, thereby enhancing disaster resilience, emergency preparedness, and overall rural mobility. Improved roads will support local economic development by facilitating the transport of agricultural produce and improving access to essential services. The project will also enhance safety, accessibility, and convenience for women, children, the elderly, and persons with disabilities. Effective implementation of the ESMP, supported by continuous monitoring and stakeholder engagement, will minimize environmental and social risks and ensure environmentally sustainable, socially inclusive, and resilient infrastructure development under the RIVER Project.

## 1. 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 three upazilas of Habiganj District, namely Ajmirganj Upazila, Sayestaganj Upazila, and Habiganj Sadar 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 Habiganj 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 Habiganj 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 Habiganj 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 Habiganj District under the RIVER Project.

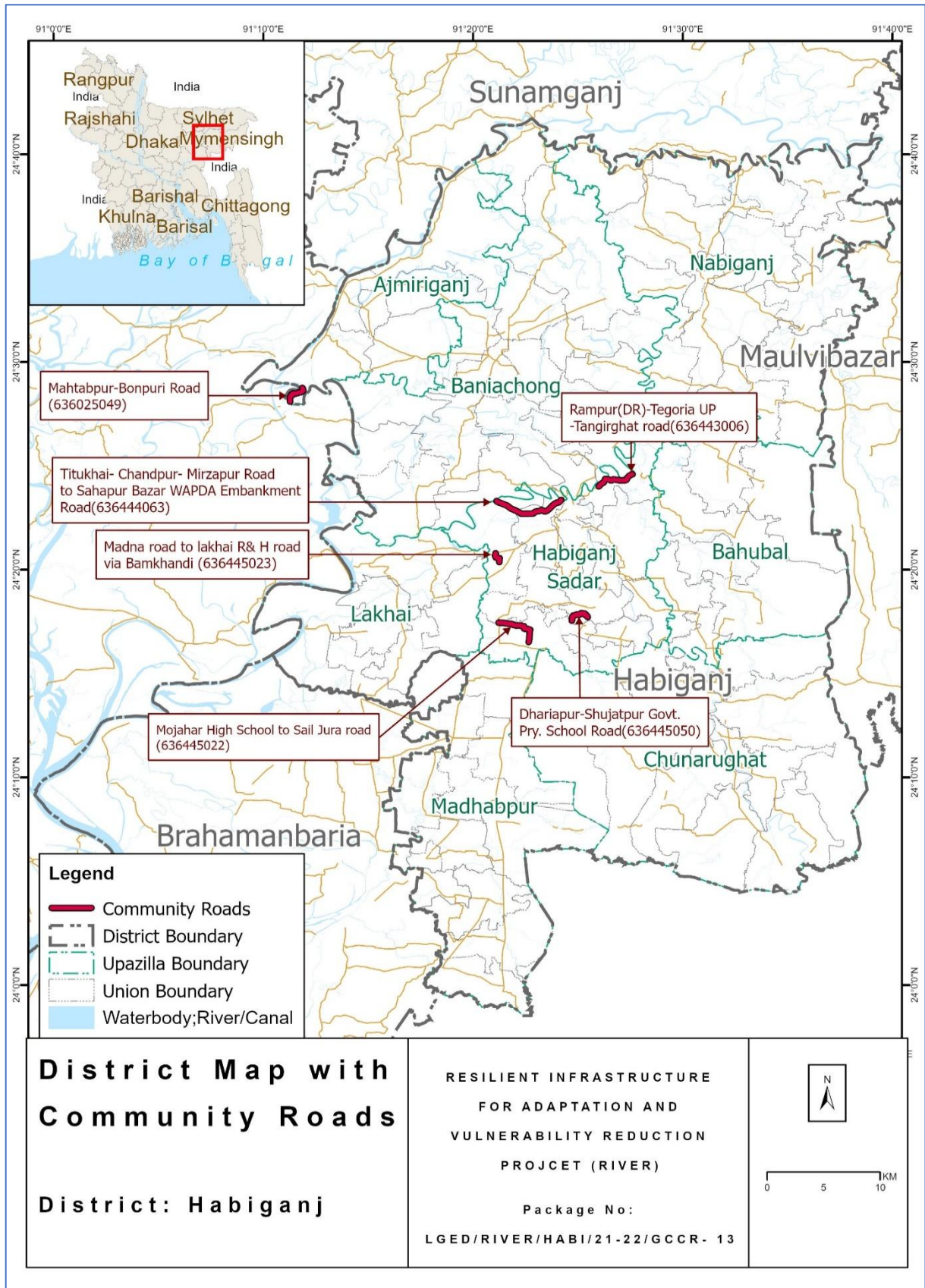
### 2.1 Sub-Project Location

The sub-project covers selected community roads located in Habiganj 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 three upazilas:

1. **Ajmirganj 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.
2. **Sayestaganj Upazila** – The sub-project roads in this upazila pass through several small settlements and agricultural areas, often adjacent to flood shelters constructed under the RIVER Project. The roads are critical for emergency evacuation during flood events.
3. **Habiganj 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 Habiganj District is attached in **Figure 2.1**.



**Figure 1.2.1: Map illustrating Community Roads of Habiganj 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.

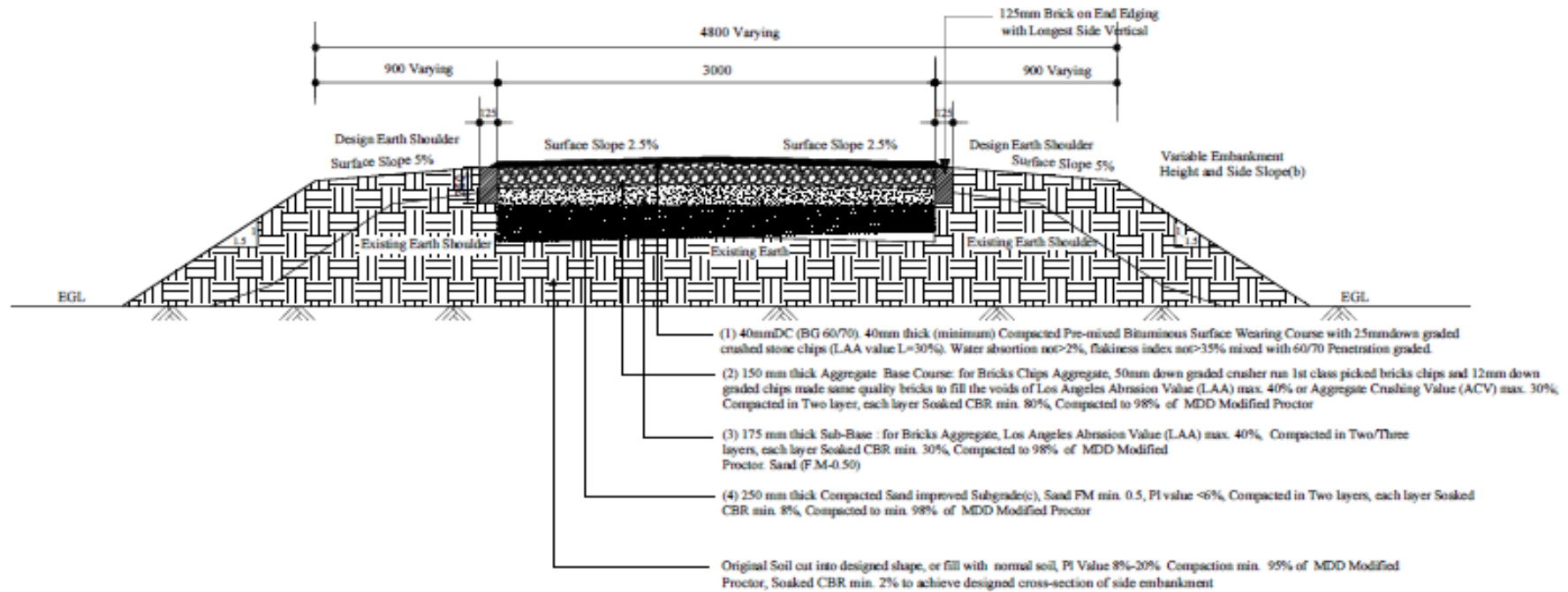
## 2.4 Sub-Project Description

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.

BC PAVEMENT DESIGN OF COMMUNITY ROAD



NOTES:

- (a) All dimensions are in millimeter unless otherwise specified,
- (b) Side Slope Protection method will vary for different conditions,
- (c) The local sand can be used as ISG subject to approval of L.GED if the sand satisfies the following two conditions;
  - (i) Passing # 200 sieve (Not more than 15%) and
  - (ii) CBR Value: 3%

Traffic (CVD)	Sub-grade Soaked CBR (%)	Wearing Course (mm)	Base Course (mm)	Sub-base Course (mm)	Improved sub-grade (mm)
		(1)	(2)	(3)	(4)
0-50	4	40	150	175	250

Figure: Typical Pavement Design of Community Roads

## 2.5 Elementary information of Community Road in Habiganj District

The community road package components in Habiganj District, located in the southern region of Sylhet 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 Ajmirganj Upazila, Sayestaganj Upazila, and Habiganj Sadar Upazila. Each road component has been identified with specific GPS coordinates to define its alignment and location within the respective union parishads such as Kakachew, Tegoria, Richi, Lukra, Dhariapur, Sujatpur, Bramandora, unions 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.	Ajmirganj	Kakachew	Mahtabpur-Bonpuri Road (636025049)	<u>Starting Point</u> 24.47924722 N 91.19764167 E <u>Ending Point</u> 24.46818056 N 91.18776667 E	2.1	Mahtabpur, Alipur	Mahtabpur GPS	320m from proposed shelter
2.	Habiganj Sadar	Tegoria	Rampur (DR)-Tegoria UP-Tangirghat road (636443006)	<u>Starting Point</u> 24.40027778 N 91.43305556 E <u>Ending Point</u> 24.41001667 N	3.405	Aowura, Rojobpur, Raj Nagar, Tangirghat	Tangirghat GPS	150m from 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
				91.46015 E				
3.	Habiganj Sadar	Richi, Lukra	Titukhai- Chandpur-Mirzapur Road to Sahapur Bazar WAPDA Embankment Road (636444063)	<b>Starting Point</b> 24.389341 N 91.40339 E <b>Ending Point</b> 24.388434 N 91.352 E	3.130	Norshatpur, Chandpur	5 No. Chandpur GPS	Adjacent from proposed shelter
4.	Habiganj Sadar	Dhariapur, Sujatpur	Dhariapur-Shujatpur Govt. Pry. School Road (636445050)	<b>Starting Point</b> 24.29531667 N 91.42448889 E <b>Ending Point</b> 24.29255556 N 91.41179444 E	2.115	Nijampur	Sujatpur GPS	Adjacent from proposed shelter
5.	Sayestaganj	Bramandora	Mojahar High School to Sail Jura Road (636445022)	<b>Starting Point</b> 24.275277 N 91.3775 E <b>Ending Point</b> 24.29083333 N 91.35361111 E	4.1	Sailjura, Sherpur	Putia GPS	75m from proposed shelter
6.	Habiganj Sadar	Lukra	Madna road to lakhai R& H road via Bamkhandi (636445023)	<b>Starting Point</b> 24.34638889 N 91.35111111 E <b>Ending Point</b> 24.33916667 N 91.35388889 E	1.15	Bamkhandi	102 No. Banikandi GPS	Adjacent from proposed shelter

[\*Sources of data: Field survey, March 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 Habiganj 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 Ajmirganj Upazila, Sayestaganj Upazila, and Habiganj Sadar.

**Existing Pavement Condition and Chainage:** Most of the existing roads are earthen, paved or semi-paved 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 covers 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 Habiganj 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	Existing Pavement Condition with Chainage	Existing Structures on the road	Proposed Road Interventions	Safeguard Features
1.	Mahtabpur-Bonpuri Road	636025049	Unpaved- 0+00 to 2+100	U Drain (6m × 9m × 1m)- Ch. 680m, (5.7m × 1.5m × 1m)- Ch. 1388m	RCC-0+00 to 2+100 U Drain- Ch. 1336m, Ch. 1449m  Palisading/CC Block (66m)- 0+044 to 0+110 (Right Side), (148m)- 0+352 to 0+500 (Right Side), (54m)- 0+401 to 0+455 (Left Side)  Palisading (55m)- 0+816 to 0+871 (Left Side), (102m)- 0+936 to 1+038 (Right Side), (89m)- 1+060 to 1+149 (Right Side), (40m)- 1+690 to 1+730 (Right Side), (75m)- 1+925 to 2+000 (Right Side), (48m)- 2+000 to 2+048 (Left Side)	Not available in site
2	Rampur (DR)- Tegoria UP- Tangirghat road	636443006	Unpaved- 4+100 to 5+950  BC (Damaged)- 2+545 to 4+100	Culvert (4.2m × 6.20m)- 2+480, (2.1m × 3.66m)- 2+795, (3.65m × 7.9m)- 4+116  Palisading (41m)- 2+737 to 2+838 (Left Side), (26m)- 2+922 to 2+948 (Left Side), (37m)- 3+048 to 3+085 (Right Side)	BC- 4+100 to 5+950, 2+545 to 4+100  Palisading (52m)- 2+797 to 2+849 (Left Side), (250m)- 4+100 to 4+350 (Right Side), (58m)- 4+837 to 4+895 (Left Side), (56m)- 4+956 to 5+012 (Both Side), (32m)- 5+042 to 5+074 (Left Side), (277m)-	Not available in site

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Sl. No.	Road Name	Road ID	Existing Pavement Condition with Chainage	Existing Structures on the road	Proposed Road Interventions	Safeguard Features
				Bridge (3.72m × 77m)- 3+498 to 3+575	5+098 to 5+375 (Right Side), (20m)- 5+210 to 5+230 (Left Side), (30m)- 5+330 to 5+365 (Left Side), (100m)- 5+560 to 5+660 (Right Side)	
3.	Titukhai- Chandpur-Mirzapur Road to Sahapur Bazar WAPDA Embankment Road	636444063	Paved- 4+050 to 6+000  HBB (Damaged)- 0+000 to 1+180	-	BC-0+00 to 1+180, 4+050 to 6+000	Not available in site
4.	Dhariapur- Shujatpur Govt. Pry. School Road	636445050	Paved- 0+00 to 3+200	U Drain (0.9m × 1.2m)- Ch. 103m, (0.9m × 1.2m)- Ch. 389m, (0.9m × 1.2m)- Ch. 429m, (0.9m × 1.2m)- Ch. 567m, (0.9m × 1.2m)- Ch. 650m, (0.9m × 1.2m)- Ch. 657m, (0.9m × 1.2m)- Ch. 882m, (0.9m × 1.2m)- Ch. 967m, (0.9m × 1.2m)- Ch. 1650m, (0.9m × 1.2m)- Ch. 1707m, (0.9m × 1.2m)- Ch. 1860m, (0.9m × 1.2m)- Ch. 1910m  Box Culvert (3.7m × 2.9m)- Ch. 379m  Palisading (20m)- 0+060 to 0+080 (Left Side)	BC-0+00 to 2+115  U Drain (0.9m × 1.2m)- Ch. 103m, (0.9m × 1.2m)- Ch. 389m, (0.9m × 1.2m)- Ch. 429m, (0.9m × 1.2m)- Ch. 567m, (0.9m × 1.2m)- Ch. 650m, (0.9m × 1.2m)- Ch. 657m, (0.9m × 1.2m)- Ch. 882m, (0.9m × 1.2m)- Ch. 967m, (0.9m × 1.2m)- Ch. 1650m, (0.9m × 1.2m)- Ch. 1707m, (0.9m × 1.2m)- Ch. 1860m, (0.9m × 1.2m)- Ch. 1910m  Palisading (20m)- 0+060 to 0+080 (Left Side), (16m)- 0+250 to 0+266 (Left Side), (8m)- 0+333 to 0+341, (36m)- 0+731 to 0+767, (40m)-	Not available in site

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Sl. No.	Road Name	Road ID	Existing Pavement Condition with Chainage	Existing Structures on the road	Proposed Road Interventions	Safeguard Features
					0+770 to 0+810, (76m)- 0+815 to 0+891, (11m)- 1+400 to 1+411 (Left Side), (11m)- 1+688 to 1+705 (Left Side), (90m)- 1+707 to 1+797 (Left Side), (44m)- 1+915 to 1+959	
5.	Mojahar High School to Sail Jura Road	636445022	Unpaved- 4+100 to 4+600 (Damaged- 0+500 to 2+050  BC- 0+500 to 4+100	U Drain (1.6m × 7m)- 1+066, (1.5m × 6m)- 1+268, (1.6m × 7m)- 1+554, (1.6m × 6m)- 4+552,  Culvert (3m × 5m)- 1+797	BC-1+000 to 4+100  RCC-0+500 to 1+000  U Drain (1.6m × 7m)- 1+066, (1.5m × 6m)- 1+268, (1.6m × 7m)- 1+554	Not available in site
6.	Madna road to lakhai R& H road via Bamkhandi	636445023	BC (Damaged)- 0+00 to 1+150	U Drain (1.5m × 5.5m)- 0+324  Culvert (3m × 5m)- 0+008, (3.6m × 5.6m)- 0+839  Palisading (50m)- 0+600 to 0+650 (Right Side), (23m)- 0+777 to 0+800 (Right Side)	Uni-Block-0+00 to 1+150  Culvert (3m × 3m)- 0+008  Palisading (10m)- 0+012 to 0+022 (Left Side), (61m)- 0+066 to 0+128 (Left Side), (129m)- 0+271 to 0+400 (Right Side), (21m)- 0+845 to 0+866 (Right Side)	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 setting. 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, schools, 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, community centers, 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 Habiganj 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: Sylhet	District: Habiganj		Upazila: Amirganj
Name of the Road:	Mahtabpur-Bonpuri Road (636025049)		
Total Road Length (Km)	2.1 km		
Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Settlement (5m), Agricultural land/ Haor (30m), Ditch (20m)
		R	Agricultural land/ Haor (25m), Ditch (10m)
300-600	L		Agricultural land/ Haor (25m), Ditch (10m)
		R	Agricultural land/ Haor (200m), Ditch (10m)
600-900	L		Settlement (5m), Agricultural land/ Haor (50m), Ditch (20m)
		R	Settlement (5m), Agricultural land(30m), Ditch (20m), River (100m)
900-1200	L		Agricultural land(30m), Ditch (15m), Cemetery (10m)
		R	Settlement (5m), Agricultural land(30m), Ditch (20m), Pond (15m)
1200-1500	L		Settlement (20m), Agricultural land(10m), Ditch (5m), Haor (30m)
		R	Settlement (15m), Agricultural land/ Ditch (25m), Haor (30m)
1500-1800	L		Settlement (25m), Agricultural land(30m), Ditch (10m)
		R	Community Clinic/ Settlement (15m), Haor/ Agricultural land(20m)
1800-2100	L		Haor/ Agricultural Land (10m), Pond (5m)
		R	Pond (10m), Haor/ Agricultural land (10m), Settlement (20m)

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Division: Sylhet	District: Habiganj	Upazila: Habiganj Sadar	
<b>Name of the Road:</b>	<b>Rampur (DR)-Tegoria UP-Tangirghat road (636443006)</b>		
Total Road Length (Km)	3.405 km		
Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
2545-2845	L		Pond 4m, Agricultural Land 300m, Cemetery 20m, Settlements 20m
		R	Ditch and Agricultural Land 20m, Settlement 10m
2845-3145	L		Eidgah 4m, Settlement 6m, Agricultural Land 400m, River 300m
		R	Ditch and Agricultural Land 30m, Settlement 10m
3145-3445	L		Agricultural Land and Ditch 20m, Settlement 10m, River 200m
		R	Agricultural Land and Ditch 30m, Canal 10m
3445-3745	L		Canal 30m, Agricultural Land and Ditch 20m, Settlement 20m
		R	Agricultural and Ditch 20m, Canal 40m, Settlement 10m
3745-4045	L		Agricultural Land and Ditch 30m, Settlement 30m
		R	Agricultural Land and Ditch 30m, Canal 20m
4045-4345	L		Agricultural Land 30m, Ditch 20m, Settlement 30m
		R	Agricultural Land and Ditch 20m, Canal 20m
4345-4645	L		Agricultural Land and Ditch 400m, Settlement 20m, River 250m
		R	Agricultural Land and Ditch 40m, Settlement 10m
4645-4945	L		Bazar 10m, Eidgah 30m, Settlement 10m
		R	Agricultural Land, Ditch 40m, Settlement 10m
4945-5245	L		Agricultural Land and Ditch 200m, Settlement 10m, River 300m, Pond 7m
		R	Agricultural Land and Ditch 30m, Settlement 10m
5245-5545	L		Tongirhat GPS 10m, Agricultural Land and Ditch 300m, Settlement 15m, River 650m
		R	Agricultural Land and Ditch 30m, Settlement 20m

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5545-5950	L		Agricultural Land and Ditch 50m, Settlement 10m, River 900m
		R	Agricultural Land and Ditch 30m, Settlement 20m, Fish Pond 300m
<b>Name of the Road:</b>	<b>Titukhai- Chandpur- Mirzapur Road to Sahapur Bazar WAPDA Embankment Road (636444063)</b>		
Total Road Length (km)	3.13 km		
<b>Chainage</b>	<b>Orientation (Left/Right)</b>		<b>Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)</b>
00-300	L		River 180m, Settlement 700m
		R	Settlement 30m, Cemetery 30m, Agricultural Land 25m
300-600	L		River 200m, Settlement 800m
		R	Agricultural Land 20m, Settlement 300m
600-900	L		River 500m
		R	Playground 20m, Agricultural Land 30m
900-1180	L		River 550m
		R	Agricultural land 20m
4050-4350	L		River 250m
		R	Agricultural land 30m,
4350-4650	L		Agricultural land 30m, River 400m
		R	Agricultural Land 30m, Settlement 500m
4650-4950	L		Agricultural land 350m, River 500m
		R	Agricultural Land 50m, Settlement 300m
4950-5250	L		Settlement 30m, Agricultural Land 30m
		R	Agricultural land 20m, Settlement 20m, 5 no. Chandpur GPS 5m
5250-5550	L		Settlement 15m, Agricultural Land 30m, Mosque 6m
		R	Settlement 10m, Agricultural Land 30m
5550-5850	L		Bazar 10m, Agricultural Land 15m
		R	Bazar 8m, Agricultural Land 300m, Settlement 10m
5850-6000			Bazar 15m, Agricultural Land 25m
			Bazar 10m, Agricultural Land 200m, Settlement 14m

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Name of the Road:	Dhariapur-Shujatpur Govt. Pry. School Road (636445050)		
Total Road Length (km)	2.115 km		
Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Settlement (3.5m), Bazar (3.5m), Pond (3m)
		R	Settlement 3.5m, Ditch 3m
300-600	L		Settlement 3m, Ditch 3m
		R	Settlement 3m, Pond 5m
600-900	L		Settlement 5m, Ditch 5.5m
		R	Agricultural Land 5m, Ditch 3.5m
900-1200	L		Settlement 4m, Ditch 5m
		R	Settlement 4m, Ditch 5m
1200-1500	L		Madrasa Complex 5m, Mosque 5m, Settlement 5m, Eidgah 5m, Canal 100m
		R	Settlement 5m, Pond 5m, Ditch 5m, Agricultural Land 10m
1500-1800	L		Canal 5.5m, Settlement 20m, Ditch 7m
		R	Settlement 30m
1800-2115	L		Canal 10m, Agricultural Land 15m
		R	Settlement 8m
<b>Division: Sylhet</b>	<b>District: Habiganj</b>		<b>Upazila: Sayestaganj</b>
Name of the Road:	Mojahar High School to Sail Jura Road (636445022)		
Total Road Length (km)	4.1 km		
Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
500-800	L		Pran-RFL School and College 5m, Factory 5m, Mojhar High school (500m), Agricultural Land 300m
		R	Pran-RFL Factory 7m
800-1100	L		Sailjura Bazar 4m, Agricultural Land 500m, Settlement 10m
		R	Sailjura Bazar 5m, Mosque 5m, Madrasha 5m, Settlement 7m
1100-1400	L		Agricultural Land 3m, Settlement 6m

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		R	Agricultural Land 20m, Settlement 200m
1400-1700	L		Agricultural Land 15m, Settlement 10m
		R	Agricultural Land 10m, Settlement 10m
1700-2000	L		Agricultural Land 30m, Settlement 10m
		R	Agricultural Land 20m, Settlement 7m
2000-2300	L		Agricultural Land 6m, Settlement 10m, Putia GPS 75m
		R	Agricultural Land 5m, Settlement 50m
2300-2600	L		Agricultural Land 20m, Settlement 10m
		R	Agricultural Land 20m, Settlement 10m
2600-2900	L		Agricultural Land 50m, Settlement 5m
		R	Agricultural Land 20m, Settlement 10m
2900-3200	L		Agricultural Land 20m, Settlement 7m
		R	Agricultural Land 30m, Settlement 10m
3200-3500	L		Agricultural Land 20m, Settlement 5m
		R	Agricultural Land 20m, Settlement 30m
3500-3800	L		Agricultural Land 30m, Settlement 100m
		R	Agricultural Land 20m, Settlement 10m
3800-4100	L		Agricultural Land 5m, Settlement 7m
		R	Settlement 7m and 200m
4100-4400	L		Settlement 10m
		R	Settlement 7m, Mosque 5m
4400-4600	L		Settlement 7m
		R	Settlement 8m
<b>Division: Sylhet</b>	<b>District: Habiganj</b>		<b>Upazila: Habiganj Sadar</b>
<b>Name of the Road:</b>	<b>Madna road to lakhai R&amp; H road via Bamkhandi (636445023)</b>		
Total Road Length (Km)	1.15 km		
<b>Chainage</b>	<b>Orientation (Left/Right)</b>		<b>Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)</b>
00-300	L		Settlement 10m, Bazar 6m, Agricultural Land 20m

		R	102 no. Bamkandi GPS, Bamkandi Highschool 5m, Agricultural Land 60m, Canal 7m
300-600	L		Settlement 20m, Mosque 12m, Agricultural Land 300m
		R	Settlement 8m, Shops 5m
600-900	L		Pond 5m, Settlement 2m, Agricultural Land 10m
		R	Settlement 3m, Pond 5m
900-1150	L		Agricultural Land 5m, Settlement 7m
		R	Agricultural Land 5m, Settlement 5m

(\*Data Source: Field Survey, March 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 Habiganj 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 Habiganj District**

Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
1	Mahtabpur-Bonpuri Road	<ul style="list-style-type: none"> <li>Dust generation from earthworks, material transport, and road improvement may affect nearby homesteads, settlements, agricultural land, haor areas, ponds, graveyards, and roadside ditches located close to the alignment.</li> <li>Noise from construction machinery and vehicles may disturb nearby residents and community activities.</li> <li>Temporary disruption of local movement and access for residents and pedestrians during rehabilitation works.</li> <li>Existing ponds, ditches, and low-lying areas may experience temporary drainage disturbance or waterlogging if not properly managed.</li> <li>Community and worker safety risks may arise due to construction traffic and equipment movement near settlements and community facilities.</li> </ul>	<ul style="list-style-type: none"> <li>Apply regular water spraying on exposed surfaces, cover transported materials, control vehicle speed, and maintain machinery to reduce dust emissions.</li> <li>Restrict noisy works to daytime where feasible and maintain equipment properly.</li> <li>Maintain temporary access routes, install warning signs and barricades, and inform local residents in advance about construction schedules.</li> <li>Protect existing drainage paths, ponds, and ditches and ensure uninterrupted water flow.</li> <li>Provide personal protective equipment (PPE), install safety signage, and manage vehicle movement carefully within work zones.</li> </ul>
2	Rampur (DR)-Tegoria UP-Tangirghat road	<ul style="list-style-type: none"> <li>Dust and air pollution from construction activities may affect nearby agricultural land, homes, shops, ponds, canals, graveyards, mosques, and Eidgah areas.</li> <li>Noise disturbance from equipment may impact nearby households and community activities.</li> </ul>	<ul style="list-style-type: none"> <li>Conduct regular water spraying, cover materials during transport, and control vehicle speeds near settlements.</li> <li>Limit high-noise activities to daytime and maintain machinery properly.</li> <li>Install traffic signs, barricades, and temporary diversions while ensuring pedestrian access.</li> </ul>

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Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
		<ul style="list-style-type: none"> <li>• Temporary disruption of pedestrian and vehicular movement during road and drainage works.</li> <li>• Blockage of canals, ditches, and cross-drainage systems may lead to localized waterlogging if not properly managed.</li> <li>• Construction near religious and community locations may cause temporary inconvenience.</li> </ul>	<ul style="list-style-type: none"> <li>• Rehabilitate and maintain drainage systems, including canals, culverts, and ditches.</li> <li>• Avoid unnecessary disturbance near religious and community sites and coordinate activities with local stakeholders.</li> </ul>
<b>3</b>	Titukhai- Chandpur- Mirzapur Road to Sahapur Bazar WAPDA Embankment Road	<ul style="list-style-type: none"> <li>• Noise and vibration from construction machinery may affect nearby houses, shops, mosques, graveyards, schools, agricultural land, and connecting roads.</li> <li>• Temporary disruption of traffic and pedestrian movement along the corridor during construction.</li> <li>• Minor removal of roadside vegetation and bamboo bushes may occur within the existing right of way.</li> <li>• Risk of soil erosion, slope instability, or damage to adjacent low-lying land and water edges if construction is not properly managed.</li> <li>• Community safety risks due to movement of heavy vehicles near settlements and local access roads.</li> <li>• Temporary disruption to roadside economic activities such as shops and small businesses.</li> </ul>	<ul style="list-style-type: none"> <li>• Restrict construction activities to daytime where feasible and maintain machinery to minimize noise and vibration.</li> <li>• Install warning signs, barricades, and maintain temporary access for pedestrians and vehicles.</li> <li>• Minimize vegetation removal and undertake compensatory plantation where possible.</li> <li>• Use proper compaction, slope protection, and drainage measures to prevent erosion and instability.</li> <li>• Implement phased construction and consult local residents to reduce disruption to access and livelihoods.</li> </ul>

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Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
4	Dhariapur-Shujatpur Govt. Pry. School Road	<ul style="list-style-type: none"> <li>• Dust from excavation, earthworks, and construction traffic may affect nearby homes, settlements, agricultural land, schools, markets, and roadside areas.</li> <li>• Noise from machinery may disturb residents and community facilities.</li> <li>• Temporary traffic congestion and reduced mobility during road repair and culvert improvement works.</li> <li>• Safety risks for local residents and school children due to movement of construction vehicles and equipment.</li> <li>• Temporary disruption to local businesses and roadside vendors.</li> </ul>	<ul style="list-style-type: none"> <li>• Apply dust suppression measures such as water spraying, covering materials, and controlling vehicle speeds.</li> <li>• Restrict noisy activities to daytime and maintain equipment properly.</li> <li>• Implement traffic management using signage, flag personnel, barricades, and temporary diversions.</li> <li>• Install safety barriers and ensure safe movement of pedestrians and vehicles.</li> <li>• Maintain access to homes, shops, and local roads and coordinate activities with community representatives.</li> </ul>
5	Mojahar High School to Sail Jura Road	<ul style="list-style-type: none"> <li>• Dust generation from earthworks, transport, and road improvement may affect nearby settlements, markets, agricultural land, mosques, graveyards, schools, ponds, and households.</li> <li>• Temporary obstruction of pedestrian and local traffic may create inconvenience for residents, school children, and vendors.</li> <li>• Inadequate drainage management may lead to waterlogging due to nearby ponds, agricultural land, and drainage channels.</li> </ul>	<ul style="list-style-type: none"> <li>• Control dust through regular water spraying, covering of materials, and speed management.</li> <li>• Maintain traffic flow through phased construction, temporary routes, and advance notice to communities.</li> <li>• Rehabilitate culverts and maintain proper drainage to ensure uninterrupted water flow.</li> <li>• Dispose of construction waste at designated sites and reuse materials where feasible.</li> <li>• Maintain access to markets and businesses and coordinate with affected people to minimize disruption.</li> </ul>

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Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
		<ul style="list-style-type: none"> <li>• Construction waste may pollute surrounding land and drainage systems if not properly managed.</li> <li>• Temporary disturbance to local livelihoods including shops, markets, and farming activities.</li> </ul>	
<b>6</b>	Madna road to lakhai R& H road via Bamkhandi	<ul style="list-style-type: none"> <li>• Temporary obstruction of traffic and pedestrian movement during culvert replacement, embankment, and road improvement works.</li> <li>• Soil erosion and slope instability along embankment sections, particularly in low-lying and flood-prone areas.</li> <li>• Waterlogging and drainage blockage due to disruption of existing culverts and cross-drainage systems.</li> <li>• Construction debris and excavated materials may cause environmental pollution and drainage blockage if unmanaged.</li> <li>• Community health and safety risks from heavy vehicles and construction activities near settlements and community areas.</li> <li>• Long-term positive impact through improved connectivity and enhanced access during floods or emergencies.</li> </ul>	<ul style="list-style-type: none"> <li>• Implement traffic management measures, provide warning signs, and maintain temporary access routes.</li> <li>• Stabilize slopes and embankments through proper compaction, grading, and protective measures such as turfing.</li> <li>• Maintain and restore drainage systems to ensure continuous water flow during construction.</li> <li>• Properly manage and dispose of construction waste and maintain site cleanliness.</li> <li>• Install safety signage, provide PPE, and ensure controlled construction activities near community areas.</li> <li>• Incorporate climate-resilient design and improved drainage for long-term sustainability.</li> </ul>

## 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 Centers, others roads & Connecting 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 benefit 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 in Ajmirganj, Sayestaganj, and Habiganj Sadar Upazilas. 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**

<b>Project Stage</b>	<b>Potential Environmental &amp; Social Impacts/Issues</b>	<b>Proposed Mitigation Measures</b>	<b>Institutional Responsibilities</b>	<b>Supervision Responsibility</b>
Pre-Construction Stage	Loss of land / and other physical assets	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of livelihood	<ul style="list-style-type: none"> <li>Under this subproject, there is no scope of negative impact on the livelihoods of adjacent communities or people.</li> <li>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.</li> </ul>	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Stakeholders Engagement	<ul style="list-style-type: none"> <li>All of the project stakeholders should be consulted</li> <li>Separate community level consultation meeting with the potential affected HHs</li> <li>All the safeguard documents will be disclosed to all relevant stakeholders.</li> </ul>	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

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		<ul style="list-style-type: none"> <li>• People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.</li> </ul>		
Pre-Construction Stage	Loss of right to access	<ul style="list-style-type: none"> <li>• Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact.</li> <li>• In case of unavoidable circumstances, alternative access will be provided.</li> </ul>	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"> <li>• Transportation of construction materials to the site will be carried out by covering the materials as a whole.</li> <li>• Store the materials in designated places, with proper fencing and coverings.</li> </ul>	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Sanitation and water supply	<ul style="list-style-type: none"> <li>• Sanitation facilities (male and female toilets, wash-basins, etc.) for workers and constructor's officials/employees will be provided.</li> <li>• 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.</li> </ul>	Contractor	Environmental Consultant of PIU
Pre-	Site Selection for workers	<ul style="list-style-type: none"> <li>• Workers camp, site office and stack yard should be</li> </ul>	Contractor	Environmental

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Construction Stage	camps, stack yards & implementing interventions: Generation of ESHS issues.	<p>located at a site favorable for the workers and proposed by the contractor &amp; approved by the Environmental Specialist of D&amp;SC.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Construction of sanitary latrine with septic tank for both male and female workers and staffs; and ensure regular cleaning of those.</li> <li>• Provision of waste bins/ cans, where appropriate,</li> <li>• Litter is to be collected daily.</li> <li>• 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&amp;SC.</li> <li>• Camp and working areas are to be kept clean and tidy at all times.</li> <li>• Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly</li> </ul>		Consultant of PIU

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those.</p> <ul style="list-style-type: none"> <li>• Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it.</li> <li>• 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.</li> </ul>		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage; removal/relocation of utility services	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• After completing the development, the site shall be restored as before.</li> <li>• This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place.</li> </ul>	PIU & Contractor	Environmental Consultant of PIU

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		<ul style="list-style-type: none"> <li>• Sub project intervention must avoid natural disturbance to existing slop and natural drainage.</li> <li>• 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.</li> <li>• The contractor must ensure sound environment for the local residents near the sub project site.</li> </ul>		
Construction Activity	Noise from construction works	<ul style="list-style-type: none"> <li>• Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance.</li> <li>• All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works.</li> <li>• Noise producing vehicles and equipment will be keep in maintenance regularly.</li> <li>• 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.</li> </ul>	Contractor	Environmental Consultant of PIU
Construction Activity	Dust	<ul style="list-style-type: none"> <li>• Acceptable range of emission of CO, particulate matter [SPM (<b>Suspended particulate matter</b>),</li> </ul>	Contractor	Environmental Consultant of PIU

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		<p>PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices.</p> <ul style="list-style-type: none"> <li>• Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes.</li> <li>• Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level.</li> <li>• Construction materials should be covered properly while carrying in vehicles to the site.</li> </ul>		
Construction Activity	Safety Issues	<ul style="list-style-type: none"> <li>• 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)</li> <li>• Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff.</li> <li>• Records of every training must be kept at site.</li> <li>• All kinds of Child labour are completely prohibited in every site.</li> <li>• Every construction materials storage site will be well fenced by Tin and safety caution tape.</li> </ul>	Contractor	Environmental Consultant of PIU

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Construction Activity	Traffic Management	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer.</li> <li>• Local traffic police department should be contacted, if traffic problem becomes more complex.</li> </ul>	Contractor	Environmental Consultant of PIU
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

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		<ul style="list-style-type: none"> <li>• 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.</li> <li>• Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site.</li> <li>• Local community must be consulted before any construction works start.</li> </ul>		
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> <li>• Maintain safety measures during the movement of heavy machinery and equipment.</li> <li>• Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community.</li> <li>• Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.)</li> <li>• Local community will be trained up on traffic management and awareness.</li> </ul>	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	<ul style="list-style-type: none"> <li>• 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</li> </ul>	Contractor	Social Development Specialist and Gender Specialist of PIU

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		<p>kept on site.</p> <ul style="list-style-type: none"> <li>• Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling.</li> <li>• Adequate facilities ensuring sanitation for labor camps will be put in place.</li> <li>• Treated water will be made available at site for drinking purpose.</li> <li>• Adequate accommodation arrangements for labor forces.</li> <li>• Labor code of conduct is to be disclosed through consultation.</li> </ul>		
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> <li>• A separate grievance mechanism for workers has to be established for the work package.</li> <li>• Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner.</li> <li>• 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.</li> </ul>		
Construction Activity	Waste Management: Improper management and	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
	handling of hazardous and non-hazardous waste during construction.	<ul style="list-style-type: none"> <li>• Waste from the temporary accommodation facilities for labor</li> <li>• Waste from equipment maintenance/vehicles on-site.</li> <li>• 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.</li> <li>• Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs.</li> <li>• Working areas are kept clean and tidy at all times.</li> <li>• Construction site is to be checked for spills of substances i.e. chemical, oil, etc.</li> <li>• Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site.</li> <li>• Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.</li> <li>• Refueling areas and other fluid transfer areas will be imperviously paved.</li> <li>• Workers will be trained on the correct transfer and handling of fuels and chemicals and the response</li> </ul>		

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		<p>to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment.</p> <ul style="list-style-type: none"> <li>• Applicability of the Hazardous Waste Management Rules.</li> </ul>		
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"> <li>• Slope protection measures (proper compaction, palisading or protection walls, etc.) will be taken before starting work at any sensitive section of the road.</li> <li>• Dust suppression measures and material storage and handling procedure have to be undertaken with proper care and vigilance to avoid or minimize the impacts.</li> </ul>	Contractor	Environmental and Social Development Consultant of PIU, PSC
Construction Activity	<p>Health &amp; Safety Risks:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Exposure to health</li> </ul>	<ul style="list-style-type: none"> <li>• All construction equipment will be properly inspected timely.</li> <li>• The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site.</li> <li>• Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting.</li> <li>• Proper Signpost at any slippery areas will be ensured in construction site.</li> </ul>	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU

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	<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"> <li>• Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire.</li> <li>• 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.</li> <li>• All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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</li> </ul>		

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		<p>stroke, and dehydration. Written records of this awareness training shall be kept on site.</p> <ul style="list-style-type: none"> <li>• Adequate quantities of drinking water will be available at all Sites, on different locations within the site.</li> <li>• Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities.</li> <li>• 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.</li> </ul>		
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.)</li> <li>• The material stockpile sites shall be far away from surface water bodies and areas prone to surface</li> </ul>	Contractor	Environmental Consultant of PIU/D&SC.

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		<p>run-off. Loose materials shall be bagged and covered.</p> <ul style="list-style-type: none"> <li>• Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion.</li> <li>• 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.</li> <li>• All precautions to store chemicals/oil/fuel properly so that no chance of spill.</li> <li>• Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.</li> </ul>		
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"> <li>• Pollution from waste materials.</li> </ul>	<ul style="list-style-type: none"> <li>• 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</li> </ul>	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

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	<ul style="list-style-type: none"> <li>Health &amp; Safety risks to workers and local community.</li> </ul>	<p>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"> <li>The contractor must arrange the cancellation of all temporary services.</li> </ul>		
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"> <li>Preventative maintenance schedule should be followed.</li> <li>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.</li> </ul>	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"> <li>The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&amp;S Officer for strict management and monitoring of all ES related works at each site and the budget for this</li> </ul>	Contractor	Environmental Consultant of PIU

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>engagement shall be borne from the Contractor's management budget.</p> <ul style="list-style-type: none"> <li>Contractor shall submit regular monthly monitoring report to the D&amp;SC and PIU as per reporting standard set by the ES Consultants of D&amp;SC/PIU.</li> </ul>		
Operation & Maintenance	<p>Road Safety. Impacts include:</p> <ul style="list-style-type: none"> <li>The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers.</li> <li>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.</li> </ul>	<p>Road safety issues can be minimized in following ways:</p> <ul style="list-style-type: none"> <li>By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety.</li> <li>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.</li> <li>All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.</li> </ul>	UE (Upazila Engineer)	District Executive Engineer, LGED
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> <li>Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures.</li> </ul>	UE	District XEN, LGED

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<b>Project Stage</b>	<b>Potential Environmental &amp; Social Impacts/Issues</b>	<b>Proposed Mitigation Measures</b>	<b>Institutional Responsibilities</b>	<b>Supervision Responsibility</b>
		<ul style="list-style-type: none"><li>• Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.</li></ul>		

### 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

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Sl. No.	ES Aspect / Issue	Monitoring Parameters / Indicators	Frequency / Timing	Responsibility	Means of Verification / Monitoring Method
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
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

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Sl. No.	ES Aspect / Issue	Monitoring Parameters / Indicators	Frequency / Timing	Responsibility	Means of Verification / Monitoring Method
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
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

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Sl. No.	ES Aspect / Issue	Monitoring Parameters / Indicators	Frequency / Timing	Responsibility	Means of Verification / Monitoring Method
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

### 5.3 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.	<ul style="list-style-type: none"> <li>- National environmental &amp; labor laws</li> <li>- World Bank E&amp;S Framework</li> <li>- Grievance Redress Mechanism (GRM)</li> <li>- ESMP implementation &amp; monitoring</li> </ul>	At project start and annually	Environmental & Social Specialists (PIU)/ D&S Consultant

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Sl. No.	Key Actor / Target Group	Type of Training / Guidance	Objectives	Main Topics to be Covered	Frequency/ Timing	Responsible Entity
				- Gender Issues in Infrastructure Development Project.		
2	<b>Supervision Consultants</b>	Training on E&S Supervision and Monitoring	To ensure that consultants effectively monitor contractors' compliance with E&S standards.	<ul style="list-style-type: none"> <li>- ESMP &amp; site-specific E&amp;S checklists- Waste management &amp; pollution control</li> <li>- Labor &amp; working condition compliance</li> <li>- Occupational Health &amp; Safety (OHS)</li> <li>- Gender-sensitive supervision</li> <li>- Incident reporting &amp; corrective actions.</li> </ul>	Before mobilization and quarterly refreshers	PIU with support from E&S Experts
3	<b>Contractor's Management Staff</b>	Induction and Periodic E&S Management Training	To ensure site managers and engineers integrate E&S compliance in daily site operations.	<ul style="list-style-type: none"> <li>- Contractor's ESMP &amp; Method Statements</li> <li>- Environmental and Social Codes of Practices (ESCoPs)</li> <li>- OHS plan implementation</li> <li>- Labor rights and grievance mechanism</li> <li>- Community health &amp; safety</li> <li>- Gender-based violence (GBV) and SEA/SH prevention</li> </ul>	Prior to construction & bi-annually, if deemed required.	Supervision Consultant / PIU E&S Team
4	<b>Contractor's Workforce (Skilled &amp; Unskilled Workers)</b>	Toolbox Meetings/ Awareness Sessions	To build awareness and behavioral change for safe, responsible, and inclusive site practices.	<ul style="list-style-type: none"> <li>- Worksite safety protocols (PPE use, accident prevention)</li> <li>- Environmental cleanliness &amp; waste segregation</li> <li>- Respectful workplace behavior &amp; anti-harassment</li> <li>- Gender equality &amp; inclusion</li> </ul>	Weekly or bi-weekly at site	Contractor's E&S Officer / OHS Supervisor

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Sl. No.	Key Actor / Target Group	Type of Training / Guidance	Objectives	Main Topics to be Covered	Frequency/ Timing	Responsible Entity
				- HIV/AIDS and communicable disease awareness		
5	<b>Community Representatives / Local Stakeholders</b>	Information & Awareness Session	To enhance local understanding of project impacts, grievance redress, and gender inclusion measures.	<ul style="list-style-type: none"> <li>- Project scope &amp; benefits</li> <li>- Potential impacts &amp; mitigation measures</li> <li>- Community safety measures</li> <li>- GRM process</li> <li>- Gender &amp; inclusion awareness</li> </ul>	During pre-construction & as needed	PIU & Contractor's Community Engagement Officer
6	<b>Gender Focal Points (PIU, Contractor, Consultant)</b>	Gender and Social Inclusion (GESI) Training	To promote integration of gender considerations into project implementation.	<ul style="list-style-type: none"> <li>- Gender Action Plan implementation</li> <li>- GBV/SEA/SH mitigation &amp; referral pathways</li> <li>- Inclusive employment &amp; equal pay</li> <li>- Women's participation in decision-making</li> </ul>	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. However, a generic list of species to be used for the plantation is given below in Table 5, and it is to be noted that the tree species should be native to the project location.

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"> <li>• Most types of trees average height should be more than 1 meter</li> </ul>		Preparation of plantation pits will involve excavation of pits measuring 600 mm × 600 mm × 450 mm. The excavated soil will be	<ul style="list-style-type: none"> <li>• Watering: needs two times in a day; Prefer especially rainy</li> </ul>

Plant Selection	Height and Spacing	Planting and Fencing Details	Maintenance
<p>which equals more than 3ft. at the time of planting;</p> <ul style="list-style-type: none"> <li>As all tree heights are not same, at the time of some specific tree plantation Upazila and Contractor should communicate with Consultant Team;</li> <li>Tree plantation spacing should be 3m c/c from one tree to another tree</li> </ul>	<p>mixed with loamy silty soil and cow dung to create suitable planting media. Saplings will then be planted and securely supported using 1800 mm 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>	<p>season for tree plantation if it is in other season then proper watering is needed;</p> <ul style="list-style-type: none"> <li>Needs weed out grass and other unnecessary vegetation</li> <li>Need regular monitoring by Upazila</li> </ul>	

#### 5.4 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 six identified community roads across Ajmirganj, Sayestaganj, and Habiganj Sadar 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 from March 25-29, 2026. Public consultation meetings were conducted alongside covering of the six (6) 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 Rangpur 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**

<b>Sl. No.</b>	<b>Name of Community Road</b>	<b>Date DD-MM-YYYY</b>	<b>Venue</b>	<b>Main Participant Groups</b>	<b>No. of Participants</b>
1.	Mahtabpur-Bonpuri Road	29.03.2026	In Alipur Mahatabpur	The local individuals, elites, chairman and/or member of respective Union Parishad, farmer, businessmen, religious leaders, women, fishermen etc.	16
2.	Rampur (DR)-Tegoria UP-Tangirhat road	26.03.2026	In Tangirhat GPS		16
3.	Titukhai- Chandpur-Mirzapur Road to Sahapur Bazar WAPDA Embankment Road	25.03.2026	In Chanpur Bazar		20
4.	Dhariapur-Shujatpur Govt. Pry. School Road	27.03.2026	In Dhariapur Bazar		11
5.	Mojahar High School to Sail Jura Road	26.03.2026	In Sai jura Bazar		20
6.	Madna road to lakhai R& H road via Bamkhandi	27.03.2026	102 no. Bamkhandi GPS		17



**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 Habiganj 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 highlighted several key issues including poor road conditions during the rainy season, inadequate drainage facilities causing waterlogging, damaged culverts restricting natural water flow, and erosion of road embankments in certain vulnerable sections. Community members also expressed concerns about temporary disturbances during construction such as dust, noise, traffic obstruction, and safety risks for school children and pedestrians.

In response to these concerns, participants recommended ensuring proper rehabilitation of existing culverts and cross drains, construction of protective structures where erosion occurs, implementation of effective dust and noise control measures during construction, and installation of road safety signs near schools, markets, and densely populated areas. They also suggested maintaining uninterrupted access for local residents and agricultural transport during construction activities and giving priority to local labor employment where possible. Based on these discussions, participants recommended that the project should ensure proper rehabilitation and installation of culverts and cross-drainage structures to facilitate natural water flow and prevent water stagnation. They also suggested strengthening road embankments and constructing protection walls or palisading structures at vulnerable locations to reduce erosion and structural damage. Community members emphasized the need for road safety measures such as warning signs, speed breakers near educational institutions, and improved visibility at

road intersections. In addition, participants recommended minimizing construction disturbances, controlling dust and noise during construction activities, and ensuring that local access roads remain open during the implementation period. 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.	Mahtabpur-Bonpuri Road	2.03.2026 and In Alipur Mahatabpur	<ul style="list-style-type: none"> <li>The existing road condition is poor, becoming muddy and difficult to use during the rainy season.</li> <li>Certain sections remain waterlogged due to inadequate drainage and low elevation.</li> <li>Reliable access to flood shelters during emergencies is currently insufficient.</li> <li>Improper disposal of construction waste may negatively affect nearby land and water bodies.</li> <li>Agricultural lands and irrigation systems may be impacted.</li> <li>There is a need to increase community awareness regarding project activities and safety.</li> </ul>	<ul style="list-style-type: none"> <li>Upgrade the road surface and strengthen the base to ensure year-round usability.</li> <li>Elevate low-lying sections and install proper side drains and cross-drainage structures.</li> <li>Ensure continuous connectivity to flood shelters in the design.</li> <li>Install traffic safety signs, speed control measures, and pedestrian facilities near settlements and schools.</li> <li>Conduct awareness programs and maintain communication with local stakeholders.</li> <li>Encourage the employment of local labor during construction.</li> </ul>
2.	Rampur (DR)-Tegoria UP-Tangirghat road	26.03.2026 and In Tangirhat GPS	<ul style="list-style-type: none"> <li>Dust generated during construction may affect nearby homes, schools, and markets.</li> <li>Noise from construction activities may disturb nearby residential and institutional areas.</li> <li>Traffic congestion and safety concerns may arise during construction.</li> </ul>	<ul style="list-style-type: none"> <li>Implement dust control measures such as water spraying and proper handling of materials.</li> <li>Limit construction during sensitive periods and apply noise reduction measures.</li> <li>Prepare and implement a traffic management plan with signs, barriers, and alternative routes.</li> </ul>

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Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
			<ul style="list-style-type: none"> <li>• Possible removal of roadside trees due to widening activities.</li> <li>• Temporary disruption to access for households, shops, and agricultural lands.</li> <li>• Need for reliable access to flood shelters during emergencies.</li> <li>• Risk of erosion and damage to road shoulders during heavy rainfall.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimize tree removal and conduct compensatory plantation where necessary.</li> <li>• Ensure continued access for local communities and provide advance notice of construction activities.</li> <li>• Maintain connectivity to flood shelters. • Strengthen road shoulders and apply erosion protection measures.</li> <li>• Ensure proper drainage design and prevent blockage of irrigation channels.</li> </ul>
3.	Titukhai-Chandpur-Mirzapur Road to Sahapur Bazar WAPDA Embankment Road	25.03.2026 and In Chanpur Bazar	<ul style="list-style-type: none"> <li>• Waterlogging occurs in several low-lying sections.</li> <li>• Narrow road width restricts two-way traffic movement.</li> <li>• Dust during construction may affect nearby residences and businesses.</li> <li>• Farmers rely on roadside access for transporting agricultural goods.</li> <li>• Some houses are located very close to the road alignment.</li> <li>• Accessibility to flood shelters is important during emergencies.</li> <li>• Community members requested road safety signage.</li> </ul>	<ul style="list-style-type: none"> <li>• Improve road pavement and compaction to ensure all-weather usability.</li> <li>• Construct adequate drainage systems and culverts to prevent waterlogging.</li> <li>• Consider minor widening within the available right of way to improve traffic flow.</li> <li>• Apply dust control measures through proper construction management.</li> <li>• Install traffic control measures, warning signs, and temporary safety barriers.</li> <li>• Ensure that access to agricultural land and transport routes remains uninterrupted.</li> </ul>
4.	Dhariapur-Shujatpur Govt. Pry. School Road	27.03.2026 and In Dhariapur Bazar	<ul style="list-style-type: none"> <li>• Some sections of the road are too narrow for safe two-way traffic.</li> </ul>	<ul style="list-style-type: none"> <li>• Consider minor widening within the right of way to improve safety and traffic flow.</li> </ul>

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Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
			<ul style="list-style-type: none"> <li>• Dust during construction may affect nearby homes and shops.</li> <li>• Movement of construction vehicles may pose risks to pedestrians and school children.</li> <li>• Roadside trees provide environmental and social benefits.</li> <li>• Farmers depend on road access for transporting agricultural produce.</li> <li>• Some houses are located very close to the road.</li> <li>• Improper disposal of construction waste may damage agricultural land.</li> <li>• Community members emphasized the need for safety signage.</li> </ul>	<ul style="list-style-type: none"> <li>• Implement dust suppression measures and proper construction practices.</li> <li>• Install traffic control measures, warning signs, and temporary barriers.</li> <li>• Ensure safe working distances and minimize disruption to local residents.</li> <li>• Maintain access to flood shelters as a priority.</li> <li>• Schedule construction during daytime and maintain equipment to reduce noise.</li> <li>• Dispose of waste materials properly at designated sites.</li> <li>• Install road safety signs and markings near settlements and intersections.</li> </ul>
5.	Mojahar High School to Sail Jura Road	26.03.2026 and In Sai jura Bazar	<ul style="list-style-type: none"> <li>• Waterlogging occurs in low-lying sections during the monsoon season.</li> <li>• Construction activities may pose risks to school students and pedestrians.</li> <li>• Dust generation may affect nearby households and shops.</li> <li>• Noise from machinery may disturb nearby residents and institutions.</li> <li>• Some roadside trees may need to be removed.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop proper drainage systems, including side drains and culverts, to prevent waterlogging.</li> <li>• Implement traffic safety measures such as signage, speed control, and safe pedestrian pathways.</li> <li>• Prepare a temporary traffic management plan to maintain access to local markets.</li> <li>• Install road safety signage, speed breakers, and road markings near market areas.</li> </ul>

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

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
			<ul style="list-style-type: none"> <li>• Temporary disruption to transportation and market access may occur.</li> </ul>	
6.	Madna road to lakhai R& H road via Bamkhandi	27.03.2026 and 102 no. Bamkhandi GPS	<ul style="list-style-type: none"> <li>• Noise from construction machinery may disturb nearby residents and institutions.</li> <li>• Some roadside trees may need to be removed during widening.</li> <li>• Increased traffic may create safety concerns near markets after project completion.</li> <li>• Improper disposal of construction waste may affect agricultural land.</li> <li>• Community members emphasized the importance of maintaining access to flood shelters during emergencies.</li> </ul>	<ul style="list-style-type: none"> <li>• Improve and strengthen the road with appropriate pavement to ensure year-round accessibility.</li> <li>• Implement traffic safety measures including signage, speed control, and safe pedestrian access.</li> <li>• Apply dust control measures through water spraying and proper material management.</li> <li>• Limit construction to daytime and maintain equipment to reduce noise.</li> <li>• Minimize tree cutting and implement compensatory plantation.</li> <li>• Ensure road design maintains access to flood shelters and remains usable during flooding.</li> </ul>

## 7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the environmental and social assessment conducted for Community Roads at Habiganj District under the RIVER Project, it can be concluded that the proposed improvement of six (6) community roads across Ajmirganj Upazila, Sayestaganj Upazila, and Habiganj Sadar Upazila in Habiganj 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 Habiganj 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 Ajmirganj, Sayestaganj, and Habiganj Sadar 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 HABIGANJ**  
**DISTRICT**

## ANNEXURE 1: ROAD WISE ENVIRONMENTAL AND SOCIAL FINDINGS UNDER HABIGANJ DISTRICT

**Name of Sub-Project:** Improvement of Community Road for **Mahtabpur-Bonpuri Road, ID: 636025049**

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

**District:** Habiganj

**Upazila:** Ajmirganj

**Union:** Kakachew

**Name of Community/Local Area:** Mahtabpur, Alipur.

**Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.):** The proposed sub-project involves the improvement of the Mahtabpur–Bonpuri Road, which is currently unpaved from chainage 0+000 to 2+100. The primary intervention consists of RCC works along the entire stretch to improve structural strength, durability, and all-weather accessibility. Existing drainage structures include U-Drains measuring 6 m by 9 m by 1 m at chainage 680 m and 5.7 m by 1.5 m by 1 m at chainage 1388 m, along with additional U-Drain sections at chainages 1336 m and 1449 m. To ensure proper drainage and protect the road embankment, palisading and CC block works are proposed at several vulnerable locations, including 0+044 to 0+110 on the right side, 0+352 to 0+500 on the right side, and 0+401 to 0+455 on the left side. Further palisading works are proposed at 0+816 to 0+871 on the left side, 0+936 to 1+038 on the right side, 1+060 to 1+149 on the right side, 1+690 to 1+730 on the right side, 1+925 to 2+000 on the right side, and 2+000 to 2+048 on the left side. These combined interventions will significantly improve drainage efficiency, embankment stability, and overall road resilience. Construction activities will require materials such as sand, aggregates, cement, bitumen, bricks, steel, and water, which will be procured from approved local suppliers in accordance with applicable environmental and procurement guidelines. The project footprint will remain largely within the existing road alignment in order to minimize potential environmental and social impacts. Appropriate road safety measures and Environmental and Social Mitigation measures have been incorporated into the project design and cost estimates to ensure the safety, sustainability, and resilience of the sub-project.

Estimated footprint / land area for this sub-project is 7,350 sqm.

### **Important Environmental and Social Features near site:**

Detail Chainage Length of the sub-project: 00m to 2100m. 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 (5m), Agricultural land/ Haor (30m), Ditch (20m)
		R	Agricultural land/ Haor (25m), Ditch (10m)
300-600	L		Agricultural land/ Haor (25m), Ditch (10m)
		R	Agricultural land/ Haor (200m), Ditch (10m)
600-900	L		Settlement (5m), Agricultural land/ Haor (50m), Ditch (20m)
		R	Settlement (5m), Agricultural land(30m), Ditch (20m), River (100m)
900-1200	L		Agricultural land(30m), Ditch (15m), Cemetery (10m)
		R	Settlement (5m), Agricultural land(30m), Ditch (20m), Pond (15m)
1200-1500	L		Settlement (20m), Agricultural land(10m), Ditch (5m), Haor (30m)
		R	Settlement (15m), Agricultural land/ Ditch (25m), Haor (30m)
1500-1800	L		Settlement (25m), Agricultural land(30m), Ditch (10m)
		R	Community Clinic/ Settlement (15m), Haor/ Agricultural land(20m)
1800-2100	L		Haor/ Agricultural Land (10m), Pond (5m)
		R	Pond (10m), Haor/ Agricultural land (10m), Settlement (20m)



**Starting Point of Mahtabpur–Bonpuri 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.

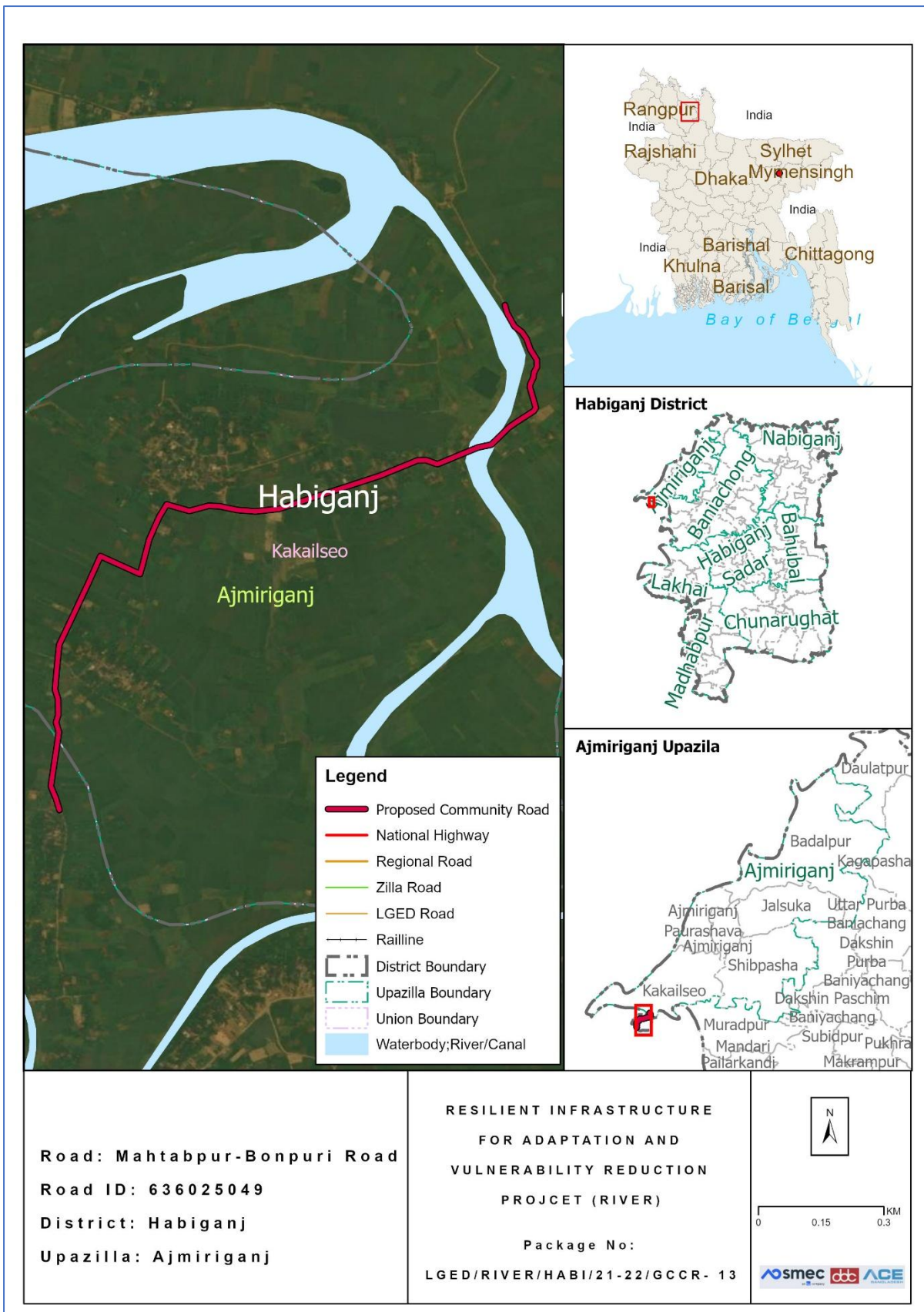
### **Types of waste to be generated during construction and operation phase:**

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 within the direct influence area of the proposed sub-project. The road alignment passes through a predominantly rural landscape characterized by settlements, agricultural land, and haor areas. Along the left side, settlements are located within approximately 5 m to 25 m at multiple chainages such as 0+000–0+300 and 0+600–0+900, while agricultural land and haor areas are found within 10 m to 50 m across sections including 0+300–0+600 and 1+200–1+500. Drainage features such as ditches are present within approximately 5 m to 20 m along most sections. A cemetery is located at approximately 10 m near Ch. 0+900–1+200. On the right side, settlements are

located within approximately 5 m to 20 m along sections such as 0+600–0+900 and 1+200–1+500, while agricultural land and haor areas extend up to approximately 200 m in sections such as 0+300–0+600. Additional sensitive features include a river located at approximately 100 m near Ch. 0+600–0+900, a community clinic within approximately 15 m near Ch. 1+500–1+800, and ponds within approximately 5 m to 15 m near Ch. 0+900–1+200 and 1+800–2+100. These features represent important environmental, social, and community assets. However, as construction activities will be confined within the existing road alignment, no significant adverse impacts are anticipated, and appropriate precautionary measures will be implemented.



**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 Reinforced Cement Concrete (RCC). According to the project design, the road will be upgraded with Reinforced Cement Concrete (RCC) along the entire alignment from Chainage 0 0m to Chainage 2100 m.

**Sub-project Location:**

Important Features	
ID	636025049
District	Habiganj
Upazila	Ajmirganj
Union	Kakachew
Total Chainage	2100m
Proposed Chainage	2100m
Road Type	Village Road
Proposed Intervention Type	Reinforced Cement Concrete (RCC)
Road Starting Point Coordinates	Latitude: 24.47924722 N Longitude: 91.19764167 E
Road Ending Point Coordinates	Latitude: 24.46818056 N Longitude: 91.18776667 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 Mahtabpur and Alipur villages
- 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. Along the left side, settlements are located within approximately 5 m to 25 m at multiple chainages such as 0+000–0+300 and 0+600–0+900, while agricultural land and haor areas are found within 10 m to 50 m across sections including 0+300–0+600 and 1+200–1+500. Drainage features such as ditches are present within approximately 5 m to 20 m along most sections. A cemetery is located at approximately 10 m near Ch. 0+900–1+200. On the right side, settlements are located within approximately 5 m to 20 m along sections such as 0+600–0+900 and 1+200–1+500, while agricultural land and haor areas extend up to approximately 200 m in sections such as 0+300–0+600. Additional sensitive features include a river located at approximately 100 m near Ch. 0+600–0+900, a community clinic within approximately 15 m near Ch. 1+500–1+800, and ponds within approximately 5 m to 15 m near Ch. 0+900–1+200 and 1+800–2+100. These features represent important environmental, social, and community assets. However, as construction activities will be confined within the existing road alignment, no significant adverse impacts are anticipated, and appropriate precautionary measures will be implemented.

#### **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 Habiganj District is situated within the north-eastern floodplain zone of Bangladesh, where soil characteristics differ from the northern districts. The area is predominantly underlain by recent alluvial deposits associated with the Kushiara River and its tributaries. The soils are generally silty clay to clay in texture, with localized occurrences of silty loam in relatively elevated areas. These soils are seasonally influenced by flooding and prolonged water retention, resulting in moderate to high moisture content throughout much of the year. Due to their fine texture and water-holding capacity, the soils are suitable for paddy cultivation, which is the dominant agricultural practice in the region. In low-lying areas, particularly near haors and beels, the soils remain saturated for extended periods during the monsoon season, further shaping land use patterns and crop selection.

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

Groundwater is the main source of potable water in the sub-project area of Habiganj District. People in the area primarily depend on shallow and intermediate-depth tube wells for their daily domestic water needs. Due to the floodplain and haor-based hydrogeological setting, the groundwater table generally remains at a relatively shallow depth, typically ranging from approximately 80 to 180 feet below ground level, with noticeable seasonal variation between monsoon and dry periods. Groundwater quality assessments indicate the presence of elevated iron concentrations in many tube wells, which may cause aesthetic issues such as discoloration, metallic taste, and staining if consumed without treatment. However, arsenic contamination in this region is generally low to negligible compared to other parts of Bangladesh. Therefore, appropriate public health measures, including installation of iron removal plants, periodic water quality testing, and community awareness programs, are essential to ensure safe drinking water. In some locations, deeper tube wells tapping relatively stable aquifers are used for drinking purposes to obtain comparatively better water quality.

Groundwater quality: pH-6.20 to 7.85, DO-3.10 to 6.90 mg/l, TDS-60.00 to 280 mg/l, EC-80 to 620  $\mu$ S/cm, Fe-0.8 to 5.5 mg/l and As-trace to Nil (Field Study Report, March 2026).

**Status of wildlife movement:**

The sub-project area in Habiganj District is characterized by a rich wetland-dependent biodiversity typical of the haor basin ecosystem. The area supports a variety of aquatic and semi-aquatic bird species commonly observed in seasonal wetlands, agricultural fields, and homestead vegetation. Frequently recorded species include pankouri (cormorant), dahuk (white-breasted waterhen), and various types of ducks and herons, which are adapted to

the extensive waterlogged environment. These birds play an important role in maintaining ecological balance through fish predation, insect control, and nutrient cycling within wetland ecosystems. In addition, the presence of small wild mammals and reptiles, such as otter (*Lutra spp.*), mongoose, and different species of snakes, reflects the ecological characteristics of the haor region. These species contribute to controlling fish predators, rodents, and other small organisms, thereby supporting both natural ecosystems and local agricultural practices. The abundance of fish species in nearby beels and haors further highlights the productivity of the aquatic ecosystem. Overall, the composition of birds, mammals, and aquatic fauna in the area indicates a dynamic and water-dependent ecosystem, and the conservation of these habitats through sustainable wetland management, protection of natural water bodies, and environmentally responsible development is essential for maintaining biodiversity, ecological stability, and long-term environmental sustainability in the locality.

**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. 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)**

No formal engineered drainage system exists along this road alignment; however, several natural drainage features are located in close proximity to the corridor. Ditches are consistently present along both sides throughout the alignment, typically within approximately 5 m to 20 m, notably at chainages 0–300 m, 300–600 m, 600–900 m, 900–1200 m, 1200–1500 m, and 1500–1800 m. Extensive low-lying agricultural land and haor areas, located within approximately 10 m to 50 m on both sides, contribute significantly to natural drainage and water retention. A river is located on the right side at chainage 600–900 m at approximately

100 m distance, while a pond is present at 900–1200 m on the right side at about 15 m and at 1800–2100 m on both sides within 5 m to 10 m. These features collectively maintain the local hydrological balance. As project activities will remain within the existing alignment, only temporary disturbances are expected; however, appropriate cross-drainage measures will be required to ensure uninterrupted water flow.

**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: Mahtabpur–Bonpuri Road**

<b>Project Stage</b>	<b>Potential Environmental &amp; Social Impacts/Issues</b>	<b>Proposed Mitigation Measures</b>	<b>Institutional Responsibilities</b>	<b>Supervision Responsibility</b>
Pre-Construction Stage	Stakeholders Engagement	<ul style="list-style-type: none"> <li>All of the project stakeholders should be consulted</li> <li>Separate community level consultation meeting with the potential affected HHs</li> <li>All the safeguard documents will be disclosed to all relevant stakeholders.</li> <li>People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.</li> </ul>	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	<ul style="list-style-type: none"> <li>Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact.</li> <li>In case of unavoidable circumstances, alternative access will be provided.</li> </ul>	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	<ul style="list-style-type: none"> <li>Transportation of construction materials to the site will be carried out by covering the materials as a whole.</li> <li>Store the materials in designated places, with proper fencing and coverings.</li> </ul>	Contractor	Environmental Consultant of PIU

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	dust and noise)			
Pre-Construction Stage	Sanitation and water supply	<ul style="list-style-type: none"> <li>• Sanitation facilities (male and female toilets with septic tanks, wash-basins, etc.) for workers and constructor’s officials/employees will be provided, and ensure regular cleaning of those.</li> <li>• 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.</li> </ul>	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"> <li>• Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor &amp; approved by the Environmental Specialist of D&amp;SC.</li> <li>• 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.</li> <li>• Provision of waste bins/ cans, where appropriate,</li> <li>• Litter is to be collected daily.</li> </ul>	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"> <li>• 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&amp;SC.</li> <li>• Camp and working areas are to be kept clean and tidy at all times.</li> <li>• 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.</li> <li>• Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it.</li> <li>• 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.</li> </ul>		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Construction facilities including materials are to be placed at least 10m distance from any water</li> </ul>	PIU & Contractor	Environmental Consultant of PIU

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>body in order to minimize the impacts on water bodies and natural water flow.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• After completing the development, the site shall be restored as before.</li> <li>• This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place.</li> <li>• Sub project intervention must avoid natural disturbance to existing slop and natural drainage.</li> </ul>		
Construction Activity	Noise from construction works	<ul style="list-style-type: none"> <li>• Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance.</li> <li>• All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works.</li> <li>• Noise producing vehicles and equipment will be keep in maintenance regularly.</li> <li>• Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the</li> </ul>	Contractor	Environmental Consultant of PIU

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		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"> <li>• Acceptable range of emission of CO, particulate matter [SPM (<b>Suspended particulate matter</b>), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices.</li> <li>• Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes.</li> <li>• Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level.</li> <li>• Construction materials should be covered properly while carrying in vehicles to the site.</li> </ul>	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	<ul style="list-style-type: none"> <li>• 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)</li> </ul>	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"> <li>• Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff.</li> <li>• Records of every training must be kept at site.</li> <li>• All kinds of Child labour are completely prohibited in every site.</li> <li>• Every construction materials storage site will be well fenced by Tin and safety caution tape.</li> </ul>		
Construction Activity	Traffic Management	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer.</li> <li>• Local traffic police department should be contacted, if traffic problem becomes more complex.</li> </ul>	Contractor	Environmental Consultant of PIU
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> <li>• Maintain safety measures during the movement of heavy machinery and equipment.</li> </ul>	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"> <li>• Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community.</li> <li>• Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.)</li> <li>• Local community will be trained up on traffic management and awareness.</li> </ul>		
Construction Activity	Labor Base Camp: Conflicts with the local residents	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling.</li> <li>• Adequate facilities ensuring sanitation for labor camps will be put in place.</li> <li>• Treated water will be made available at site for drinking purpose.</li> <li>• Adequate accommodation arrangements for labor forces.</li> <li>• Labor code of conduct is to be disclosed through</li> </ul>	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
		consultation.		
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> <li>• A separate grievance mechanism for workers has to be established for the work package.</li> <li>• Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner.</li> <li>• 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.</li> </ul>		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	<p>Preparation of a waste management plan covering the following aspects:</p> <ul style="list-style-type: none"> <li>• Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site.</li> <li>• 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.</li> <li>• Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and</li> </ul>	Contractor	Environmental Consultant of PIU

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>subsequently sold to authorized recyclers.</p> <ul style="list-style-type: none"> <li>• Refueling areas and other fluid transfer areas will be imperviously paved.</li> <li>• 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.</li> <li>• Applicability of the Hazardous Waste Management Rules.</li> </ul>		
Construction Activity	<p>Health &amp; Safety Risks:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Exposure to health</li> </ul>	<ul style="list-style-type: none"> <li>• All construction equipment will be properly inspected timely.</li> <li>• The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site.</li> <li>• Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting.</li> <li>• Proper Signpost at any slippery areas will be ensured in construction site.</li> <li>• Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire.</li> </ul>	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"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• Adequate quantities of drinking water will be available at all Sites, on different locations within the site.</li> <li>• Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities.</li> <li>• 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.</li> </ul>		

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.)</li> <li>• 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.</li> <li>• Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion.</li> <li>• 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.</li> <li>• Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.</li> </ul>	Contractor	Environmental Consultant of PIU/D&SC.

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
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"> <li>• Pollution from waste materials.</li> <li>• Health &amp; Safety risks to workers and local community.</li> </ul>	<ul style="list-style-type: none"> <li>• Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required;</li> <li>• Ensure that all affected structures rehabilitated/compensated;</li> <li>• 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.</li> <li>• Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic;</li> <li>• 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.</li> <li>• The contractor must arrange the cancellation of all temporary services.</li> </ul>	Contractor	Environmental Consultant of PIU/D&SC, district XEN.
Construction activity	<p>Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna</p>	<ul style="list-style-type: none"> <li>• Preventative maintenance schedule should be followed.</li> <li>• 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</li> </ul>	Contractor	Environmental Consultant of PIU, Union Parishad Member

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		pollution and generating nutrient rich compost soil over time.		
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	<ul style="list-style-type: none"> <li>• The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&amp;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.</li> <li>• Contractor shall submit regular monthly monitoring report to the D&amp;SC and PIU as per reporting standard set by the ES Consultants of D&amp;SC/PIU.</li> </ul>	Contractor	Environmental Consultant of PIU
Operation & Maintenance	<p>Road Safety. Impacts include:</p> <ul style="list-style-type: none"> <li>• The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers.</li> </ul>	<p>Road safety issues can be minimized in following ways:</p> <ul style="list-style-type: none"> <li>• By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety.</li> <li>• 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.</li> <li>• All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.</li> </ul>	UE (Upazila Engineer)	District Executive Engineer, LGED

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<ul style="list-style-type: none"> <li>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.</li> </ul>			
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> <li>Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures.</li> <li>Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.</li> </ul>	Upazila Engineer	District XEN, LGED

### 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><b><u>Grass Turfing</u></b> Turfing on embankment top and slope &amp; 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>	2520 Sq.m	@38.15 Tk. Per sqm	96,138.00
2.	<p><b><u>Dust suppression measures</u></b> 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>	2100.0m	@ 2.56 BDT	5,376.00
3.	<p><b><u>Water Supply and Sanitation</u></b> 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><b><u>First Aid Box</u></b> 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</p>	1 no.	LS @5000 Tk. Per box	5,000.00

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SI no.	Description of item	Quantity	Unit price	Total amount
	minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<p><b><u>Drinking Water Facilities</u></b></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><b><u>Traffic Management</u></b></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><b><u>Personal Protection Equipment for Workers</u></b></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><b><u>Motivation training</u></b></p>	1 no.	LS @ Tk. 10,000	10,000.00

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SI 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.	<b><u>Waste disposal facility</u></b> 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.	<b><u>Water Test (Drinking Water samples)</u></b> 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.	<b><u>Working labour shed:</u></b> 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.	<b><u>Environmental and Social management</u></b> 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. <a href="#">[One person to be appointed for 6 roads]</a>	Each	@ Tk. 35000	35,000.00
	<b>Total amount for this Road</b>			<b>292,159.72</b>



**Existing Surroundings of the Sub-Project**

**Name of Sub-Project:** Improvement of Community Road for **Rampur (DR)-Tegoria UP-Tangirghat road, ID: 636443006**

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

**District:** Habiganj

**Upazila:** Habiganj Sadar

**Union:** Tegoria

**Name of Community/Local Area** Aowura, Rojobpur, Raj Nagar, Tangirghat

**Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.):** The Rampur (DR)–Tegoria UP–Tangirghat Road consists of both unpaved and damaged paved sections, with unpaved portions from chainage 4+100 to 5+950 and previously bituminous but now damaged sections from 2+545 to 4+100. The proposed intervention includes bituminous carpeting from chainage 2+545 to 4+100 and from 4+100 to 5+950 to restore riding quality and ensure continuous connectivity. Existing hydraulic structures include culverts at chainages 2480 m measuring 4.2 m by 6.20 m, 2795 m measuring 2.1 m by 3.66 m, and 4116 m measuring 3.65 m by 7.9 m, as well as a bridge measuring 3.72 m by 77 m located between chainages 3+498 and 3+575. Existing palisading works are present at 2+737 to 2+838 on the left side, 2+922 to 2+948 on the left side, and 3+048 to 3+085 on the right side, while additional palisading is proposed at 2+797 to 2+849 on the left side, 4+100 to 4+350 on the right side, 4+837 to 4+895 on the left side, 4+956 to 5+012 on both sides, 5+042 to 5+074 on the left side, 5+098 to 5+375 on the right side, 5+210 to 5+230 on the left side, 5+330 to 5+365 on the left side, and 5+560 to 5+660 on the right side. These interventions will improve structural integrity, drainage capacity, and resilience of the road corridor. Necessary road safety measures and environmental mitigation provisions have also been incorporated in the project design and cost estimation to minimize potential environmental and social impacts during both construction and operation phases.

Estimated footprint / land area for this sub-project is 11,917.50 sqm.

**Important Environmental and Social Features near site:**

Detail Chainage Length of the sub-project: 3405m. Detail Environmental features within 100m of the both sides from the center 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
2545-2845	L	Pond 4m, Agricultural Land 300m, Cemetery 20m, Settlements 20m
	R	Ditch and Agricultural Land 20m, Settlement 10m
2845-3145	L	Eidgah 4m, Settlement 6m, Agricultural Land 400m, River 300m
	R	Ditch and Agricultural Land 30m, Settlement 10m

Chainage	(Left/Right)		Environmental and Social Impact
3145-3445	L		Agricultural Land and Ditch 20m, Settlement 10m, River 200m
		R	Agricultural Land and Ditch 30m, Canal 10m
3445-3745	L		Canal 30m, Agricultural Land and Ditch 20m, Settlement 20m
		R	Agricultural and Ditch 20m, Canal 40m, Settlement 10m
3745-4045	L		Agricultural Land and Ditch 30m, Settlement 30m
		R	Agricultural Land and Ditch 30m, Canal 20m
4045-4345	L		Agricultural Land 30m, Ditch 20m, Settlement 30m
		R	Agricultural Land and Ditch 20m, Canal 20m
4345-4645	L		Agricultural Land and Ditch 400m, Settlement 20m, River 250m
		R	Agricultural Land and Ditch 40m, Settlement 10m
4645-4945	L		Bazar 10m, Eidgah 30m, Settlement 10m
		R	Agricultural Land, Ditch 40m, Settlement 10m
4945-5245	L		Agricultural Land and Ditch 200m, Settlement 10m, River 300m, Pond 7m
		R	Agricultural Land and Ditch 30m, Settlement 10m
5245-5545	L		Tongirhat GPS 10m, Agricultural Land and Ditch 300m, Settlement 15m, River 650m
		R	Agricultural Land and Ditch 30m, Settlement 20m
5545-5950	L		Agricultural Land and Ditch 50m, Settlement 10m, River 900m
		R	Agricultural Land and Ditch 30m, Settlement 20m, Fish Pond 300m



**Starting Point of Rampur (DR)-Tegoria UP-Tangirghat 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.

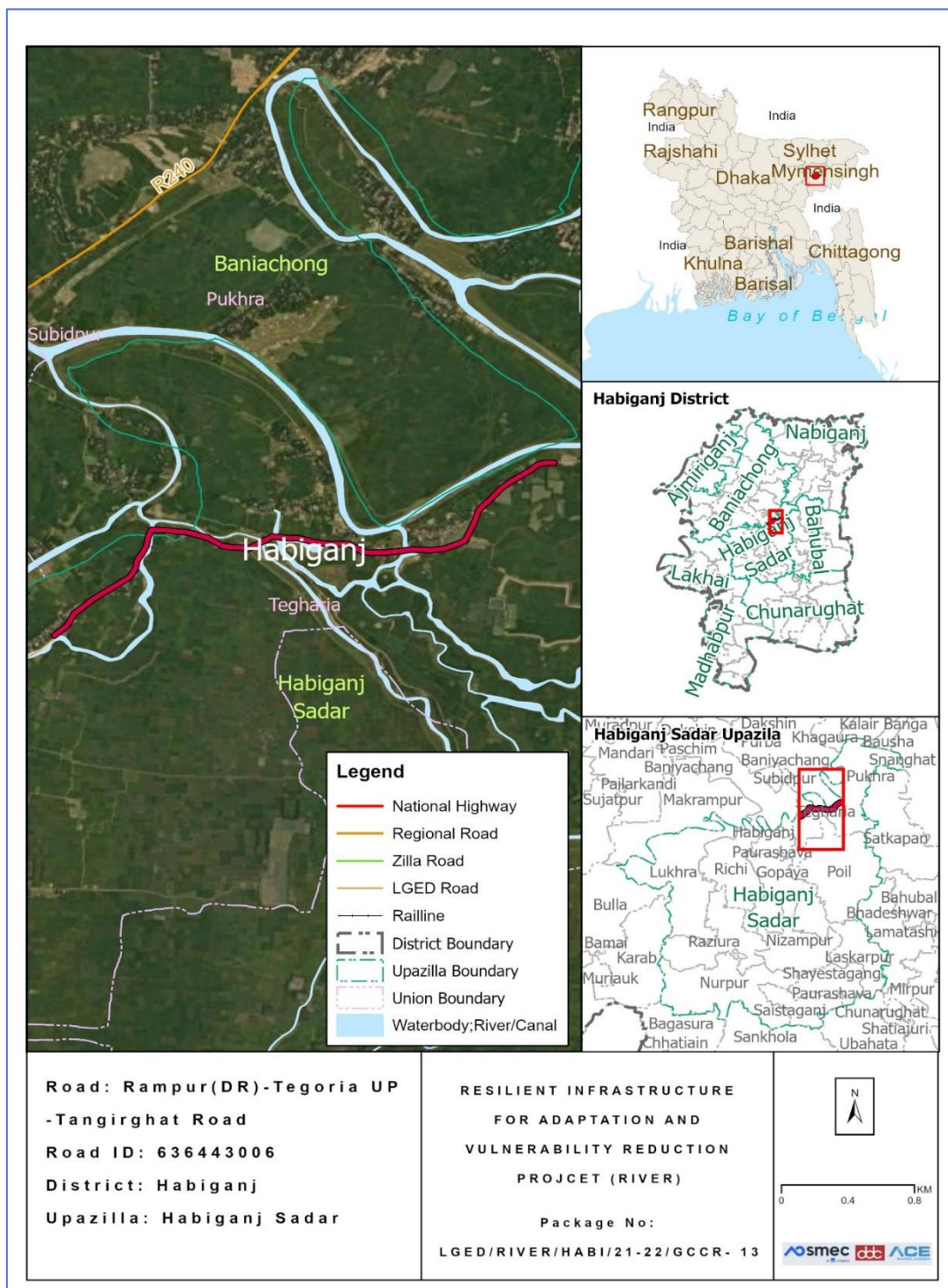
### **Types of waste to be generated during construction and operation phase:**

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:**

No historical or archaeological sites were identified within the influence area of the sub-project. The road corridor is characterized by agricultural land, settlements, and significant water bodies, including rivers, canals, ponds, and ditches located within close proximity. Along the left side, ponds are located within approximately 4 m to 7 m at sections such as 2+545–2+845 and 4+945–5+245, while settlements are found within approximately 10 m to 30 m across multiple chainages. Sensitive features include cemeteries at approximately 20 m near Ch. 2+545–2+845, Eidgahs at approximately 4 m and 30 m near Ch. 2+845–3+145 and 4+645–4+945, and bazaars within approximately 10 m. Tongirhat Government Primary School

is located within approximately 10 m near Ch. 5+245–5+545. Rivers are present at varying distances ranging from approximately 200 m to 900 m along several sections including 2+845–3+145, 3+145–3+445, and 5+545–5+950. On the right side, agricultural land and ditches are located within approximately 20 m to 40 m, settlements within approximately 10 m to 20 m, and canals within approximately 10 m to 40 m. These features highlight the environmental and socio-economic importance of the corridor. As the works will remain within the existing alignment, no significant disturbance is anticipated, though precautionary measures will be adopted.



Location Map of the proposed 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 union road. Based on field survey, this sub-project involves of Brick Flat Soiling (BFS) and earthen. According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 2545 to Ch. 5950m.

**Sub-project Location:**

Important Features	
ID	636443006
District	Habiganj
Upazila	Habiganj Sadar
Union	Tegoria
Total Chainage	3405m
Proposed Chainage	3405m
Road Type	Union Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 24.40027778 N Longitude: 91.43305556 E
Road Ending Point Coordinates	Latitude: 24.41001667 N Longitude: 91.46015 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 Aowura, Rojobpur, Raj Nagar, Tangirghat villages.
- 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. Along the left side, ponds are located within approximately 4 m to 7 m at sections such as 2+545–2+845 and 4+945–5+245, while settlements are found within approximately 10 m to 30 m across multiple chainages. Sensitive features include cemeteries at approximately 20 m near Ch. 2+545–2+845, Eidgahs at approximately 4 m and 30 m near Ch. 2+845–3+145 and 4+645–4+945, and bazaars within approximately 10 m. Tongirhat Government Primary School is located within approximately 10 m near Ch. 5+245–5+545. Rivers are present at varying distances ranging from approximately 200 m to 900 m along several sections including 2+845–3+145, 3+145–3+445, and 5+545–5+950. On the right side, agricultural land and ditches are located within approximately 20 m to 40 m, settlements within approximately 10 m to 20 m, and canals within approximately 10 m to 40 m.

#### **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 Habiganj District is situated within the north-eastern floodplain zone of Bangladesh, where soil characteristics differ from the northern districts. The area is predominantly underlain by recent alluvial deposits associated with the Kushiara River and its

tributaries. The soils are generally silty clay to clay in texture, with localized occurrences of silty loam in relatively elevated areas. These soils are seasonally influenced by flooding and prolonged water retention, resulting in moderate to high moisture content throughout much of the year. Due to their fine texture and water-holding capacity, the soils are suitable for paddy cultivation, which is the dominant agricultural practice in the region. In low-lying areas, particularly near haors and beels, the soils remain saturated for extended periods during the monsoon season, further shaping land use patterns and crop selection.

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

Groundwater is the main source of potable water in the sub-project area of Habiganj District. People in the area primarily depend on shallow and intermediate-depth tube wells for their daily domestic water needs. Due to the floodplain and haor-based hydrogeological setting, the groundwater table generally remains at a relatively shallow depth, typically ranging from approximately 80 to 180 feet below ground level, with noticeable seasonal variation between monsoon and dry periods. Groundwater quality assessments indicate the presence of elevated iron concentrations in many tube wells, which may cause aesthetic issues such as discoloration, metallic taste, and staining if consumed without treatment. However, arsenic contamination in this region is generally low to negligible compared to other parts of Bangladesh. Therefore, appropriate public health measures, including installation of iron removal plants, periodic water quality testing, and community awareness programs, are essential to ensure safe drinking water. In some locations, deeper tube wells tapping relatively stable aquifers are used for drinking purposes to obtain comparatively better water quality.

Groundwater quality: pH-6.20 to 7.85, DO-3.10 to 6.90 mg/l, TDS-60.00 to 280 mg/l, EC-80 to 620  $\mu$ S/cm, Fe-0.8 to 5.5 mg/l and As-trace to Nil (Field Study Report, March 2026).

**Status of wildlife movement:**

The sub-project area in Habiganj District is characterized by a rich wetland-dependent biodiversity typical of the haor basin ecosystem. The area supports a variety of aquatic and semi-aquatic bird species commonly observed in seasonal wetlands, agricultural fields, and homestead vegetation. Frequently recorded species include pankouri (cormorant), dahuk (white-breasted waterhen), and various types of ducks and herons, which are adapted to the extensive waterlogged environment. These birds play an important role in maintaining ecological balance through fish predation, insect control, and nutrient cycling within wetland ecosystems. In addition, the presence of small wild mammals and reptiles, such as otter (*Lutra* spp.), mongoose, and different species of snakes, reflects the ecological characteristics of the haor region. These species contribute to controlling fish predators, rodents, and other small organisms, thereby supporting both natural ecosystems and local agricultural practices. The abundance of fish species in nearby beels and haors further highlights the productivity of the aquatic ecosystem. Overall, the composition of birds, mammals, and aquatic fauna in the area indicates a dynamic and water-dependent ecosystem, and the conservation of these habitats through sustainable wetland management, protection of natural water bodies, and environmentally responsible development is essential for maintaining biodiversity, ecological stability, and long-term environmental sustainability in the locality.

**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 vii) steels viii) 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. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

### B.3: Construction Phase

<p><b>Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):</b>                  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><b>Type and quantity of raw materials used (wood, bricks, cement, water, etc.):</b>  <b>Type:</b> 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><b>Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:</b>                  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><b>Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)</b>                  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><b>Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)</b>                  No formal drainage infrastructure has been identified along this alignment; however, multiple natural drainage features exist along both sides. Ditches are continuously observed along the entire stretch, generally within approximately 20 m to 40 m. Several canals are located on the right side at chainages 3145–3445 m, 3445–3745 m, 3745–4045 m, and 4045–4345 m within approximately 10 m to 40 m, while a canal is also present on the left side at 3445–3745 m at about 30 m. Rivers are located along the left side at multiple sections, including 2845–3145 m (300 m), 3145–3445 m (200 m), 4345–4645 m (250 m), 4945–5245 m (300 m), 5245–5545 m (650 m), and 5545–5950 m (900 m), contributing significantly to regional drainage. Additionally, a pond is located at 2545–2845 m (4 m) and another at 4945–5245 m (7 m) on the left side, while a fish pond is observed at 5545–5950 m on the right side at approximately 300 m. These water bodies play an important role in maintaining hydrological balance, and therefore, proper drainage management measures will be necessary during construction.</p>
<p><b>Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)</b>                  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><b>Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:</b></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.

**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: Rampur (DR)–Tegoria UP–Tangirghat Road**

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"> <li>All of the project stakeholders should be consulted</li> <li>Separate community level consultation meeting with the potential affected HHs</li> <li>All the safeguard documents will be disclosed to all relevant stakeholders.</li> <li>People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.</li> </ul>	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	<ul style="list-style-type: none"> <li>Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact.</li> <li>In case of unavoidable circumstances, alternative access will be provided.</li> </ul>	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"> <li>Transportation of construction materials to the site will be carried out by covering the materials as a whole.</li> <li>Store the materials in designated places, with proper fencing and coverings.</li> </ul>	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Sanitation and water supply	<ul style="list-style-type: none"> <li>Sanitation facilities (male and female toilets with septic tanks, wash-basins, etc.) for workers and constructor's officials/employees will be provided, and ensure regular cleaning of those.</li> </ul>	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"> <li>• 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.</li> </ul>		
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	<ul style="list-style-type: none"> <li>• Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor &amp; approved by the Environmental Specialist of D&amp;SC.</li> <li>• 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.</li> <li>• Provision of waste bins/ cans, where appropriate,</li> <li>• Litter is to be collected daily.</li> <li>• 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&amp;SC.</li> <li>• Camp and working areas are to be kept clean and tidy at all times.</li> <li>• Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced</li> </ul>	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those.</p> <ul style="list-style-type: none"> <li>• Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it.</li> <li>• 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.</li> </ul>		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• After completing the development, the site shall be restored as before.</li> <li>• This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place.</li> </ul>	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"> <li>Sub project intervention must avoid natural disturbance to existing slop and natural drainage.</li> </ul>		
Construction Activity	Noise from construction works	<ul style="list-style-type: none"> <li>Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance.</li> <li>All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works.</li> <li>Noise producing vehicles and equipment will be keep in maintenance regularly.</li> <li>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.</li> </ul>	Contractor	Environmental Consultant of PIU
Construction Activity	Dust	<ul style="list-style-type: none"> <li>Acceptable range of emission of CO, particulate matter [SPM (<b>Suspended particulate matter</b>), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices.</li> <li>Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes.</li> <li>Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level.</li> </ul>	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"> <li>• Construction materials should be covered properly while carrying in vehicles to the site.</li> </ul>		
Construction Activity	Safety Issues	<ul style="list-style-type: none"> <li>• 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)</li> <li>• Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff.</li> <li>• Records of every training must be kept at site.</li> <li>• All kinds of Child labour are completely prohibited in every site.</li> <li>• Every construction materials storage site will be well fenced by Tin and safety caution tape.</li> </ul>	Contractor	Environmental Consultant of PIU
Construction Activity	Traffic Management	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer.</li> <li>• Local traffic police department should be contacted, if traffic problem becomes more complex.</li> </ul>	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> <li>• Maintain safety measures during the movement of heavy machinery and equipment.</li> <li>• Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community.</li> <li>• Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.)</li> <li>• Local community will be trained up on traffic management and awareness.</li> </ul>	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling.</li> <li>• Adequate facilities ensuring sanitation for labor camps will be put in place.</li> <li>• Treated water will be made available at site for drinking purpose.</li> <li>• Adequate accommodation arrangements for labor forces.</li> <li>• Labor code of conduct is to be disclosed through consultation.</li> </ul>	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"> <li>• A separate grievance mechanism for workers has to be established for the work package.</li> <li>• Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner.</li> <li>• 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.</li> </ul>		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	<p>Preparation of a waste management plan covering the following aspects:</p> <ul style="list-style-type: none"> <li>• Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site.</li> <li>• 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.</li> <li>• Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.</li> <li>• Refueling areas and other fluid transfer areas will be imperviously paved.</li> </ul>	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"> <li>• 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.</li> <li>• Applicability of the Hazardous Waste Management Rules.</li> </ul>		
Construction Activity	<p>Health &amp; Safety Risks:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm</li> </ul>	<ul style="list-style-type: none"> <li>• All construction equipment will be properly inspected timely.</li> <li>• The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site.</li> <li>• Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting.</li> <li>• Proper Signpost at any slippery areas will be ensured in construction site.</li> <li>• Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire.</li> <li>• 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.</li> </ul>	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.	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• Adequate quantities of drinking water will be available at all Sites, on different locations within the site.</li> <li>• Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities.</li> <li>• 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.</li> </ul>		
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> <li>• 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.</li> <li>• The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or</li> </ul>	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.)</p> <ul style="list-style-type: none"> <li>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.</li> <li>Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion.</li> <li>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.</li> <li>Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.</li> </ul>		
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"> <li>Pollution from waste materials.</li> </ul>	<ul style="list-style-type: none"> <li>Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required;</li> <li>Ensure that all affected structures rehabilitated/compensated;</li> <li>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.</li> <li>Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic;</li> </ul>	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"> <li>Health &amp; Safety risks to workers and local community.</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>The contractor must arrange the cancellation of all temporary services.</li> </ul>		
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"> <li>Preventative maintenance schedule should be followed.</li> <li>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.</li> </ul>	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"> <li>The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&amp;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.</li> <li>Contractor shall submit regular monthly monitoring report to the D&amp;SC and PIU as per reporting standard set by the ES Consultants of D&amp;SC/PIU.</li> </ul>	Contractor	Environmental Consultant of PIU
Operation & Maintenance	Road Safety. Impacts include:	Road safety issues can be minimized in following ways:	UE (Upazila Engineer)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<ul style="list-style-type: none"> <li>• The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers.</li> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety.</li> <li>• 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. Traffic signage, pedestrian safety measures, and speed breakers will be provided near the bazar areas.</li> <li>• All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the nighttime.</li> </ul>		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> <li>• Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures.</li> <li>• Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.</li> </ul>	Upazila Engineer	District XEN, LGED

### 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

SI no.	Description of item	Quantity	Unit price	Total amount
1.	<p><b><u>Grass Turfing</u></b></p> <p>Turfing on embankment top and slope &amp; 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>	4086. Sq.m	@38.15 Tk. Per sqm	155,880.90
2.	<p><b><u>Dust suppression measures</u></b></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>	3405	@ 2.56 BDT	8,716.80
3.	<p><b><u>Water Supply and Sanitation</u></b></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><b><u>First Aid Box</u></b></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

SI 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><b><u>Drinking Water Facilities</u></b></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><b><u>Traffic Management</u></b></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><b><u>Personal Protection Equipment for Workers</u></b></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><b><u>Motivation training</u></b></p>	1 no.	LS @ Tk. 10,000	10,000

SI 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.	<b><u>Waste disposal facility</u></b> 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.	<b><u>Water Test (Drinking Water samples)</u></b> 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.	<b><u>Working labour shed:</u></b> 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.	<b><u>Environmental management</u></b> 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. <a href="#">[One person to be appointed for 6 roads]</a>	Each	@ Tk. 35000	35,000
<b>Total amount for this Road</b>				<b>355,243.42</b>



**Figure: Existing Surroundings of the Sub-Project**

**Name of Sub-Project:** Improvement of Community Road for **Titukhai- Chandpur- Mirzapur Road to Sahapur Bazar WAPDA Embankment Road, ID: 636444063**

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

**District:** Habiganj

**Upazila:** Habiganj Sadar

**Union:** Richi, Lukra

**Name of Community/Local Area:** Uttar Haldibari, Mojur Hhowpati, Dakkhin Sindurna

**Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.):**

The Titukhai–Chandpur–Mirzapur Road to Sahapur Bazar WAPDA Embankment Road consists of a paved section from chainage 4+050 to 6+000 and a damaged Herringbone Brick section from 0+000 to 1+180. The proposed intervention includes bituminous carpeting from 0+000 to 1+180 and from 4+050 to 6+000 to improve surface condition, enhance durability, and ensure all-weather accessibility. No major existing drainage or hydraulic structures have been identified along this road section. The improvement works will primarily focus on pavement strengthening and improving riding quality for efficient transportation as well as for road safety work and Environmental Mitigation work.

Estimated footprint / land area for this sub-project is 9,860 sqm.

**Important Environmental and Social Features near site:**

Detail Chainage Length of the sub-project: 3130m. Detail Environmental features within 100m of the both sides from the center 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		River 180m, Settlement 700m
		R	Settlement 30m, Cemetery 30m, Agricultural Land 25m
300-600	L		River 200m, Settlement 800m
		R	Agricultural Land 20m, Settlement 300m
600-900	L		River 500m
		R	Playground 20m, Agricultural Land 30m
900-1180	L		River 550m
		R	Agricultural land 20m
4050-4350	L		River 250m
		R	Agricultural land 30m,
4350-4650	L		Agricultural land 30m, River 400m
		R	Agricultural Land 30m, Settlement 500m
4650-4950	L		Agricultural land 350m, River 500m
		R	Agricultural Land 50m, Settlement 300m

Chainage	(Left/Right)		Environmental and Social Impact
4950-5250	L		Settlement 30m, Agricultural Land 30m
		R	Agricultural land 20m, Settlement 20m, 5 no. Chandpur GPS 5m
5250-5550	L		Settlement 15m, Agricultural Land 30m, Mosque 6m
		R	Settlement 10m, Agricultural Land 30m
5550-5850	L		Bazar 10m, Agricultural Land 15m
		R	Bazar 8m, Agricultural Land 300m, Settlement 10m
5850-6000	L		Bazar 15m, Agricultural Land 25m
		R	Bazar 10m, Agricultural Land 200m, Settlement 14m



**Starting Point of Titukhai- Chandpur- Mirzapur Road to Sahapur Bazar WAPDA Embankment 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.

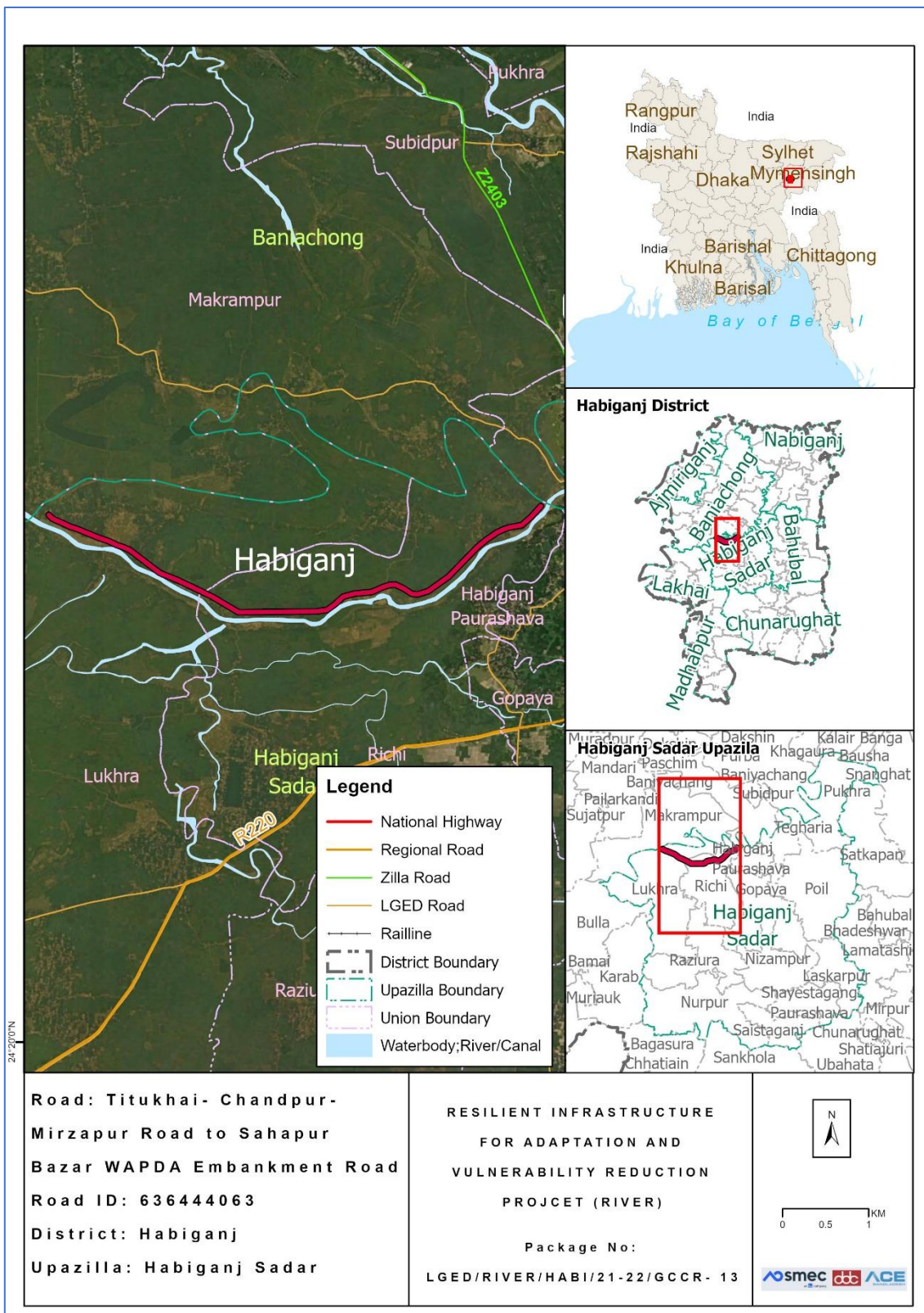
It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation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

No historical or archaeological sites were identified within the project influence area. The alignment runs adjacent to major natural features, particularly rivers located within approximately 180 m to 550 m along sections such as 0+000–0+300, 0+300–0+600, and 0+600–0+900. Settlements are located within approximately 15 m to 800 m, while agricultural land is found within approximately 25 m to 350 m. On the right side, sensitive features include cemeteries within approximately 30 m near Ch. 0+000–0+300, playgrounds within approximately 20 m near Ch. 0+600–0+900, a government primary school within approximately 5 m near Ch. 4+950–5+250, mosques within approximately 6 m near Ch. 5+250–5+550, and bazaars within approximately 8 m to 15 m at multiple chainages including 5+550–6+000. Agricultural land and settlements are consistently present within approximately 20 m to 50 m. These features indicate significant environmental and social value; however, as the project activities will remain within the existing alignment, no major adverse impacts are expected.



**Location Map of the proposed 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 union road. Based on field survey, this sub-project involves Bituminous Carpeting. According to the design this sub-project will be developed with Bituminous Carpeting (Damaged) from Ch. 00 to Ch. 1180m and Ch. 4050 to Ch. 6000m.

**Sub-project Location:**

Important Features	
ID	636444063
District	Habiganj
Upazila	Habiganj Sadar
Union	Richi, Lukra
Total Chainage	6000
Proposed Chainage	3130m
Road Type	Union Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 24.389341 N Longitude: 91.40339 E
Road Ending Point Coordinates	Latitude: 24.388434 N Longitude: 91.352 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:**

- The proposed Sub-project is located within Norshatpur, Chandpur villages.
- No historical sites were found
- Some trees, vegetation and livelihood will be affected.
- Very low chance of loss of agricultural land.
- 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 sensitive environmental, cultural, archaeological, or religious sites were observed within the vicinity of the sub-project area. The alignment runs adjacent to major natural features, particularly rivers located within approximately 180 m to 550 m along sections such as 0+000–0+300, 0+300–0+600, and 0+600–0+900. Settlements are located within approximately 15 m to 800 m, while agricultural land is found within approximately 25 m to 350 m. On the right side, sensitive features include cemeteries within approximately 30 m near Ch. 0+000–0+300, playgrounds within approximately 20 m near Ch. 0+600–0+900, a government primary school within approximately 5 m near Ch. 4+950–5+250, mosques within approximately 6 m near Ch. 5+250–5+550, and bazaars within approximately 8 m to 15 m at multiple chainages including 5+550–6+000. Agricultural land and settlements are consistently present within approximately 20 m to 50 m. These features indicate significant environmental and social value; however, as the project activities will remain within the existing alignment, no major adverse impacts are expected.

#### **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 Habiganj District is situated within the north-eastern floodplain zone of Bangladesh, where soil characteristics differ from the northern districts. The area

is predominantly underlain by recent alluvial deposits associated with the Kushiara River and its tributaries. The soils are generally silty clay to clay in texture, with localized occurrences of silty loam in relatively elevated areas. These soils are seasonally influenced by flooding and prolonged water retention, resulting in moderate to high moisture content throughout much of the year. Due to their fine texture and water-holding capacity, the soils are suitable for paddy cultivation, which is the dominant agricultural practice in the region. In low-lying areas, particularly near haors and beels, the soils remain saturated for extended periods during the monsoon season, further shaping land use patterns and crop selection.

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

Groundwater is the main source of potable water in the sub-project area of Habiganj District. People in the area primarily depend on shallow and intermediate-depth tube wells for their daily domestic water needs. Due to the floodplain and haor-based hydrogeological setting, the groundwater table generally remains at a relatively shallow depth, typically ranging from approximately 80 to 180 feet below ground level, with seasonal fluctuations during the monsoon and dry periods. Groundwater quality assessments indicate the presence of elevated iron concentrations in tube-well water, which may cause aesthetic issues such as discoloration, odor, and staining if consumed without treatment. However, arsenic contamination in this region is generally low to negligible compared to other parts of Bangladesh. Therefore, appropriate public health measures, including installation of iron removal systems, regular water quality monitoring, and community awareness programs, are essential to ensure safe drinking water. Local people also use comparatively deeper tube-well sources where available for drinking purposes, as these tend to provide more reliable water quality from deeper aquifer zones.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14 mg/l, TDS-23.40 to 320 mg/l, EC-25.7 to 681  $\mu$ S/cm, Fe-0.5 to 7.0 mg/l and As-Nil (Field Study Report, March 2026).

**Status of wildlife movement:**

The sub-project area in Habiganj District is characterized by a rich wetland-dependent biodiversity typical of the haor basin ecosystem. The area supports a variety of aquatic and semi-aquatic bird species commonly observed in seasonal wetlands, agricultural fields, and homestead vegetation. Frequently recorded species include pankouri (cormorant), dahuk (white-breasted waterhen), and various types of ducks and herons, which are adapted to the extensive waterlogged environment. These birds play an important role in maintaining ecological balance through fish predation, insect control, and nutrient cycling within wetland ecosystems. In addition, the presence of small wild mammals and reptiles, such as otter (*Lutra* spp.), mongoose, and different species of snakes, reflects the ecological characteristics of the haor region. These species contribute to controlling fish predators, rodents, and other small organisms, thereby supporting both natural ecosystems and local agricultural practices. The abundance of fish species in nearby beels and haors further highlights the productivity of the aquatic ecosystem. Overall, the composition of birds, mammals, and aquatic fauna in the area indicates a dynamic and water-dependent

ecosystem, and the conservation of these habitats through sustainable wetland management, protection of natural water bodies, and environmentally responsible development is essential for maintaining biodiversity, ecological stability, and long-term environmental sustainability in the locality.

**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

**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)**

No formal engineered drainage system exists along this road; however, the alignment is significantly influenced by nearby rivers and agricultural lands. A major river runs parallel to the alignment along the left side at multiple chainages, including 0–300 m (180 m), 300–600 m (200 m), 600–900 m (500 m), 900–1180 m (550 m), 4050–4350 m (250 m), 4350–4650 m (400 m), and 4650–4950 m (500 m). Agricultural land on the right side at distances ranging from approximately 20 m to 50 m also supports natural drainage. Although no ponds or canals are directly adjacent in most sections, the dominant presence of the river system indicates a highly water-sensitive corridor. Any construction activity must therefore ensure that natural drainage patterns are not disrupted.

**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: Titukhai–Chandpur–Mirzapur Road to Sahapur Bazar WAPDA Embankment Road**

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"> <li>All of the project stakeholders should be consulted</li> <li>Separate community level consultation meeting with the potential affected HHs</li> <li>All the safeguard documents will be disclosed to all relevant stakeholders.</li> <li>People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.</li> </ul>	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	<ul style="list-style-type: none"> <li>Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact.</li> <li>In case of unavoidable circumstances, alternative access will be provided.</li> </ul>	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"> <li>Transportation of construction materials to the site will be carried out by covering the materials as a whole.</li> <li>Store the materials in designated places, with proper fencing and coverings.</li> </ul>	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Sanitation and water supply	<ul style="list-style-type: none"> <li>Sanitation facilities (male and female toilets with septic tanks, wash-basins, etc.) for workers and constructor's officials/employees will be provided, and ensure regular cleaning of those.</li> </ul>	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"> <li>• 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.</li> </ul>		
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	<ul style="list-style-type: none"> <li>• Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor &amp; approved by the Environmental Specialist of D&amp;SC.</li> <li>• 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.</li> <li>• Provision of waste bins/ cans, where appropriate,</li> <li>• Litter is to be collected daily.</li> <li>• 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&amp;SC.</li> <li>• Camp and working areas are to be kept clean and tidy at all times.</li> <li>• Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced</li> </ul>	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those.</p> <ul style="list-style-type: none"> <li>• Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it.</li> <li>• 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.</li> </ul>		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• After completing the development, the site shall be restored as before.</li> <li>• This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place.</li> </ul>	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"> <li>Sub project intervention must avoid natural disturbance to existing slop and natural drainage.</li> </ul>		
Construction Activity	Noise from construction works	<ul style="list-style-type: none"> <li>Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance.</li> <li>All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works.</li> <li>Noise producing vehicles and equipment will be keep in maintenance regularly.</li> <li>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.</li> </ul>	Contractor	Environmental Consultant of PIU
Construction Activity	Dust	<ul style="list-style-type: none"> <li>Acceptable range of emission of CO, particulate matter [SPM (<b>Suspended particulate matter</b>), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices.</li> <li>Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes.</li> <li>Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level.</li> </ul>	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"> <li>Construction materials should be covered properly while carrying in vehicles to the site.</li> </ul>		
Construction Activity	Safety Issues	<ul style="list-style-type: none"> <li>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)</li> <li>Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff.</li> <li>Records of every training must be kept at site.</li> <li>All kinds of Child labour are completely prohibited in every site.</li> <li>Every construction materials storage site will be well fenced by Tin and safety caution tape.</li> </ul>	Contractor	Environmental Consultant of PIU
Construction Activity	Traffic Management	<ul style="list-style-type: none"> <li>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.</li> <li>Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer.</li> <li>Local traffic police department should be contacted, if traffic problem becomes more complex.</li> </ul>	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> <li>• Maintain safety measures during the movement of heavy machinery and equipment.</li> <li>• Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community.</li> <li>• Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.)</li> <li>• Local community will be trained up on traffic management and awareness.</li> </ul>	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling.</li> <li>• Adequate facilities ensuring sanitation for labor camps will be put in place.</li> <li>• Treated water will be made available at site for drinking purpose.</li> <li>• Adequate accommodation arrangements for labor forces.</li> <li>• Labor code of conduct is to be disclosed through consultation.</li> </ul>	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"> <li>• A separate grievance mechanism for workers has to be established for the work package.</li> <li>• Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner.</li> <li>• 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.</li> </ul>		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	<p>Preparation of a waste management plan covering the following aspects:</p> <ul style="list-style-type: none"> <li>• Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site.</li> <li>• 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.</li> <li>• Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.</li> <li>• Refueling areas and other fluid transfer areas will be imperviously paved.</li> </ul>	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"> <li>• 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.</li> <li>• Applicability of the Hazardous Waste Management Rules.</li> </ul>		
Construction Activity	<p>Health &amp; Safety Risks:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm</li> </ul>	<ul style="list-style-type: none"> <li>• All construction equipment will be properly inspected timely.</li> <li>• The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site.</li> <li>• Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting.</li> <li>• Proper Signpost at any slippery areas will be ensured in construction site.</li> <li>• Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire.</li> <li>• 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.</li> </ul>	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.	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>Adequate quantities of drinking water will be available at all Sites, on different locations within the site.</li> <li>Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities.</li> <li>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.</li> </ul>		
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> <li>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.</li> <li>The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or</li> </ul>	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.)</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion.</li> <li>• 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.</li> <li>• Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.</li> </ul>		
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"> <li>• Pollution from waste materials.</li> </ul>	<ul style="list-style-type: none"> <li>• Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required;</li> <li>• Ensure that all affected structures rehabilitated/compensated;</li> <li>• 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.</li> <li>• Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic;</li> </ul>	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"> <li>Health &amp; Safety risks to workers and local community.</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>The contractor must arrange the cancellation of all temporary services.</li> </ul>		
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"> <li>Preventative maintenance schedule should be followed.</li> <li>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.</li> </ul>	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"> <li>The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&amp;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.</li> <li>Contractor shall submit regular monthly monitoring report to the D&amp;SC and PIU as per reporting standard set by the ES Consultants of D&amp;SC/PIU.</li> </ul>	Contractor	Environmental Consultant of PIU
Operation & Maintenance	Road Safety. Impacts include:	<p>Road safety issues can be minimized in following ways:</p> <ul style="list-style-type: none"> <li>By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety.</li> </ul>	UE (Upazila Engineer)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<ul style="list-style-type: none"> <li>The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>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. Road signage and speed breaker for School (1+279) and road signage for graveyard (0+758) shall be installed/ constructed.</li> <li>All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.</li> </ul>		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> <li>Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures.</li> <li>Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.</li> </ul>	Upazila Engineer	District XEN, LGED

### 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><b><u>Grass Turfing</u></b></p> <p>Turfing on embankment top and slope &amp; 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>	3756 Sq.m	@38.15 Tk. Per sqm	143,291.40
2.	<p><b><u>Dust suppression measures</u></b></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>	3130.0 m	@ 2.56 BDT	8,012.80
3.	<p><b><u>Water Supply and Sanitation</u></b></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><b><u>First Aid Box</u></b></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</p>	1 no.	LS @5000 Tk. Per box	5,000

Sl no.	Description of item	Quantity	Unit price	Total amount
	throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<p><b><u>Drinking Water Facilities</u></b></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><b><u>Traffic Management</u></b></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><b><u>Personal Protection Equipment for Workers</u></b></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><b><u>Motivation training</u></b></p>	1 no.	LS @ Tk. 10,000	10,000

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project  
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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.	<b><u>Waste disposal facility</u></b> 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.	<b><u>Water Test (Drinking Water samples)</u></b> 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.	<b><u>Working labour shed:</u></b> 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.	<b><u>Environmental management</u></b> 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. <a href="#">[One person to be appointed for 6 roads]</a>	Each	@ Tk. 35000	35,000
	<b>Subtotal Bill: Environmental and Social facilities</b>			<b>341,949.92</b>



**Figure: Existing Surroundings of the Sub-Project**

**Name of Sub-Project:** Improvement of Community Road for **Dhariapur - Shujatpur Govt. Pry. School Road, ID: 636445050**

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

**District:** Habiganj

**Upazila:** Habiganj Sadar

**Union:** Dhariapur, Sujatpur

**Name of Community/Local Area:** Nijampur.

**Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.):** The Dhariapur–Shujatpur Government Primary School Road is currently paved from chainage 0+000 to 3+200, and the proposed intervention includes bituminous carpeting from 0+000 to 2+115 to rehabilitate the deteriorated section. The road includes multiple existing U-Drain structures measuring 0.9 m by 1.2 m located at chainages 103 m, 389 m, 429 m, 567 m, 650 m, 657 m, 882 m, 967 m, 1650 m, 1707 m, 1860 m, and 1910 m, as well as a box culvert measuring 3.7 m by 2.9 m at chainage 379 m. Existing palisading is present at 0+060 to 0+080 on the left side, while additional palisading works are proposed at 0+060 to 0+080 on the left side, 0+250 to 0+266 on the left side, 0+333 to 0+341, 0+731 to 0+767, 0+770 to 0+810, 0+815 to 0+891, 1+400 to 1+411 on the left side, 1+688 to 1+705 on the left side, 1+707 to 1+797 on the left side, and 1+915 to 1+959. These measures will enhance drainage performance, improve safety, and extend the service life of the road. Construction activities will require materials such as sand, aggregates, cement, bitumen, bricks, steel, and water, all sourced from approved local suppliers. The project footprint will largely remain within the existing road alignment to minimize environmental and social impacts, and provisions for road safety measures and Environmental and Social Mitigation measures have been included in the project cost estimation to ensure the safety, sustainability, and resilience of the sub-project.

Estimated footprint / land area for this sub-project is 7,402.50 sqm.

**Important Environmental and Social Features near site:**

Detail Chainage Length of the sub-project: 00m to 2115m. 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 (3.5m), Bazar (3.5m), Pond (3m)
		R	Settlement 3.5m, Ditch 3m
300-600	L		Settlement 3m, Ditch 3m
		R	Settlement 3m, Pond 5m
600-900	L		Settlement 5m, Ditch 5.5m

Chainage	(Left/Right)		Environmental and Social Impact
		R	Agricultural Land 5m, Ditch 3.5m
900-1200	L		Settlement 4m, Ditch 5m
		R	Settlement 4m, Ditch 5m
1200-1500	L		Madrasa Complex 5m, Mosque 5m, Settlement 5m, Eidgah 5m, Canal 100m
		R	Settlement 5m, Pond 5m, Ditch 5m, Agricultural Land 10m
1500-1800	L		Canal 5.5m, Settlement 20m, Ditch 7m
		R	Settlement 30m
1800-2115	L		Canal 10m, Agricultural Land 15m
		R	Settlement 8m



**Starting Point of Dhariapur-Shujatpur Govt. Pry. School 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.

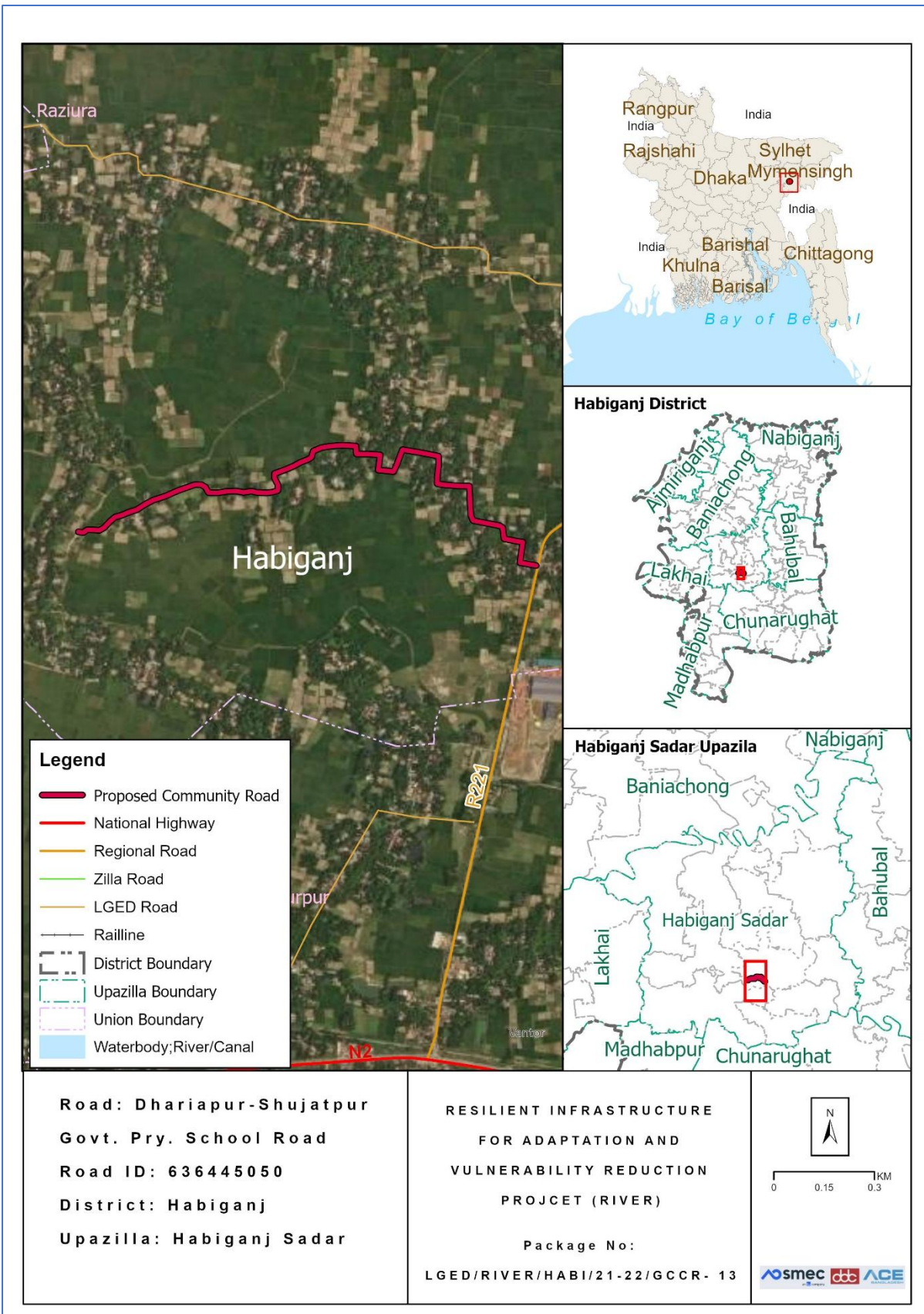
It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation 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 identified within the project area. The alignment is characterized by dense settlements located within approximately 3 m to 30 m on both sides across all chainages such as 0+000–0+300, 0+300–0+600, and 0+900–1+200. Ponds and ditches are present within approximately 3 m to 5 m throughout the corridor. On the left side, important sensitive receptors include a madrasa complex, mosque, and Eidgah within approximately 5 m near Ch. 1+200–1+500, and canals within approximately 5.5 m to 10 m near Ch. 1+500–2+115. On the right side, agricultural land is located within approximately 10 m, along with ponds and drainage ditches. These features represent key social, cultural, and environmental assets, though impacts are expected to be minimal due to alignment-based construction. These institutions hold significant religious, cultural, and educational value for the local community. However, as the proposed sub-project activities will be carried out mainly within the existing road alignment, no disturbance or adverse impact on these nearby cultural or religious sites is anticipated. Appropriate precautionary measures will be followed during construction to ensure the protection of these sensitive locations.



Location Map of the proposed 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 union 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 0 m to Chainage 2115 m.

**Sub-project Location:**

<b>Important Features</b>	
ID	636445050
District	Habiganj
Upazila	Habiganj Sadar
Union	Dhariapur, Sujatpur
Total Chainage	2115m
Proposed Chainage	2115m
Road Type	Union Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 24.29531667 N Longitude: 91.42448889 E
Road Ending Point Coordinates	Latitude: 24.29255556 N Longitude: 91.41179444 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:**

- The proposed Sub-project is located within Nijampur village.
- No historical sites were found
- Not required to relocate local community.
- Some trees, vegetation and livelihood will be affected.
- Very low chance of loss of agricultural land.
- 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 sensitive environmental, cultural, religious, and educational institutions are located within approximately 1 kilometer of the project site. On the left side, important sensitive receptors include a madrasa complex, mosque, and Eidgah within approximately 5 m near Ch. 1+200–1+500, and canals within approximately 5.5 m to 10 m near Ch. 1+500–2+115. On the right side, agricultural land is located within approximately 10 m, along with ponds and drainage ditches. These features represent key social, cultural, and environmental assets, though impacts are expected to be minimal due to alignment-based construction. These institutions hold significant religious, cultural, and educational value for the local community. However, as the proposed sub-project activities will be carried out mainly within the existing road alignment, no disturbance or adverse impact on these nearby cultural or religious sites is anticipated. Appropriate precautionary measures will be followed during construction to ensure the protection of these sensitive locations.

#### **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 Habiganj District is situated within the north-eastern floodplain zone of Bangladesh, where soil characteristics differ from the northern districts. The area is predominantly underlain by recent alluvial deposits associated with the Kushiara River and its tributaries. The soils are generally silty clay to clay in texture, with localized occurrences of silty loam in relatively elevated areas. These soils are seasonally influenced by flooding and prolonged water retention, resulting in moderate to high moisture content throughout much of the year. Due to their fine texture and water-holding capacity, the soils are suitable for paddy cultivation, which is the dominant agricultural practice in the region. In low-lying areas, particularly near haors and beels, the soils remain saturated for extended periods during the monsoon season, further shaping land use patterns and crop selection.

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

Groundwater is the main source of potable water in the sub-project area of Habiganj District. People in the area primarily depend on shallow and intermediate-depth tube wells for their daily domestic water needs. Due to the floodplain and haor-based hydrogeological setting, the groundwater table generally remains at a relatively shallow depth, typically ranging from approximately 80 to 180 feet below ground level, with seasonal fluctuations during the monsoon and dry periods. Groundwater quality assessments indicate the presence of elevated iron concentrations in tube-well water, which may cause aesthetic issues such as discoloration, odor, and staining if consumed without treatment. However, arsenic contamination in this region is generally low to negligible compared to other parts of Bangladesh. Therefore, appropriate public health measures, including installation of iron removal systems, regular water quality monitoring, and community awareness programs, are essential to ensure safe drinking water. Local people also use comparatively deeper tube-well sources where available for drinking purposes, as these tend to provide more reliable water quality from deeper aquifer zones.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14 mg/l, TDS-23.40 to 320 mg/l, EC-25.7 to 681  $\mu$ S/cm, Fe-0.5 to 7.0 mg/l and As-Nil (Field Study Report, March 2026).

**Status of wildlife movement:**

The sub-project area in Habiganj District is characterized by a rich wetland-dependent biodiversity typical of the haor basin ecosystem. The area supports a variety of aquatic and semi-aquatic bird species commonly observed in seasonal wetlands, agricultural fields, and homestead vegetation. Frequently recorded species include pankouri (cormorant), dahuk (white-breasted waterhen), and various types of ducks and herons, which are adapted to the extensive waterlogged environment. These birds play an important role in maintaining ecological balance through fish predation, insect control, and nutrient cycling within wetland ecosystems. In addition, the presence of small wild mammals and reptiles, such as otter (*Lutra* spp.), mongoose, and different species of snakes, reflects the ecological

characteristics of the haor region. These species contribute to controlling fish predators, rodents, and other small organisms, thereby supporting both natural ecosystems and local agricultural practices. The abundance of fish species in nearby beels and haors further highlights the productivity of the aquatic ecosystem. Overall, the composition of birds, mammals, and aquatic fauna in the area indicates a dynamic and water-dependent ecosystem, and the conservation of these habitats through sustainable wetland management, protection of natural water bodies, and environmentally responsible development is essential for maintaining biodiversity, ecological stability, and long-term environmental sustainability in the locality.

**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. 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)**

No formal drainage system has been identified along this alignment; however, multiple natural drainage features are present. Ditches are consistently found on both sides at close distances of approximately 3 m to 7 m along almost the entire alignment, including chainages 0–300 m, 300–600 m, 600–900 m, 900–1200 m, 1200–1500 m, and 1500–1800 m. Ponds are located at 0–300 m (left side, 3 m), 300–600 m (right side, 5 m), and 1200–1500 m (right side, 5 m). Canals are present at 1200–1500 m (100 m on the left side), 1500–1800 m (5.5 m), and 1800–2115 m (10 m). These features play a vital role in local drainage and water management. As the project activities will be confined to the existing alignment, only temporary impacts are anticipated, but adequate cross-drainage provisions will be required.

<p><b>Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)</b></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><b>Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:</b></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><b>Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)</b></p> <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.</p>
<p><b>Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:</b></p> <p>No traffic movement impacts on light but low effects of noise and air pollution.</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)

#### B.4: Operation Phase

<p><b>Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:</b></p> <p>No</p>
<p><b>Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)</b></p> <p>No</p>
<p><b>Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)</b></p> <p>No.</p>
<p><b>Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)</b></p> <p>There is no possibility of stagnant water bodies remained for encouraging mosquito breeding and other disease vectors, during the operation phase.</p>
<p><b>Likely direct and indirect impacts on economic development in the project areas by the sub-project:</b></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</p>

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: Dhariapur–Shujatpur Government Primary School Road**

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"> <li>All of the project stakeholders should be consulted</li> <li>Separate community level consultation meeting with the potential affected HHs</li> <li>All the safeguard documents will be disclosed to all relevant stakeholders.</li> <li>People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.</li> </ul>	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	<ul style="list-style-type: none"> <li>Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact.</li> <li>In case of unavoidable circumstances, alternative access will be provided.</li> </ul>	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	<ul style="list-style-type: none"> <li>Transportation of construction materials to the site will be carried out by covering the materials as a whole.</li> <li>Store the materials in designated places, with proper fencing and coverings.</li> </ul>	Contractor	Environmental Consultant of PIU

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	dust and noise)			
Pre-Construction Stage	Sanitation and water supply	<ul style="list-style-type: none"> <li>• Sanitation facilities (male and female toilets with septic tanks, wash-basins, etc.) for workers and constructor’s officials/employees will be provided, and ensure regular cleaning of those.</li> <li>• 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.</li> </ul>	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"> <li>• Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor &amp; approved by the Environmental Specialist of D&amp;SC.</li> <li>• 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.</li> <li>• Provision of waste bins/ cans, where appropriate,</li> <li>• Litter is to be collected daily.</li> </ul>	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"> <li>• 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&amp;SC.</li> <li>• Camp and working areas are to be kept clean and tidy at all times.</li> <li>• 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.</li> <li>• Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it.</li> <li>• 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.</li> </ul>		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Construction facilities including materials are to be placed at least 10m distance from any water</li> </ul>	PIU & Contractor	Environmental Consultant of PIU

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>body in order to minimize the impacts on water bodies and natural water flow.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• After completing the development, the site shall be restored as before.</li> <li>• This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place.</li> <li>• Sub project intervention must avoid natural disturbance to existing slop and natural drainage.</li> </ul>		
Construction Activity	Noise from construction works	<ul style="list-style-type: none"> <li>• Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance.</li> <li>• All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works.</li> <li>• Noise producing vehicles and equipment will be keep in maintenance regularly.</li> <li>• Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the</li> </ul>	Contractor	Environmental Consultant of PIU

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project  
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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		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"> <li>• Acceptable range of emission of CO, particulate matter [SPM (<b>Suspended particulate matter</b>), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices.</li> <li>• Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes.</li> <li>• Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level.</li> <li>• Construction materials should be covered properly while carrying in vehicles to the site.</li> </ul>	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	<ul style="list-style-type: none"> <li>• 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)</li> </ul>	Contractor	Environmental Consultant of PIU

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project  
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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> <li>• Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff.</li> <li>• Records of every training must be kept at site.</li> <li>• All kinds of Child labour are completely prohibited in every site.</li> <li>• Every construction materials storage site will be well fenced by Tin and safety caution tape.</li> </ul>		
Construction Activity	Traffic Management	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer.</li> <li>• Local traffic police department should be contacted, if traffic problem becomes more complex.</li> </ul>	Contractor	Environmental Consultant of PIU
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> <li>• Maintain safety measures during the movement of heavy machinery and equipment.</li> </ul>	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"> <li>• Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community.</li> <li>• Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.)</li> <li>• Local community will be trained up on traffic management and awareness.</li> </ul>		
Construction Activity	Labor Base Camp: Conflicts with the local residents	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling.</li> <li>• Adequate facilities ensuring sanitation for labor camps will be put in place.</li> <li>• Treated water will be made available at site for drinking purpose.</li> <li>• Adequate accommodation arrangements for labor forces.</li> <li>• Labor code of conduct is to be disclosed through</li> </ul>	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
		consultation.		
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> <li>• A separate grievance mechanism for workers has to be established for the work package.</li> <li>• Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner.</li> <li>• 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.</li> </ul>		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	<p>Preparation of a waste management plan covering the following aspects:</p> <ul style="list-style-type: none"> <li>• Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site.</li> <li>• 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.</li> <li>• Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and</li> </ul>	Contractor	Environmental Consultant of PIU

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>subsequently sold to authorized recyclers.</p> <ul style="list-style-type: none"> <li>• Refueling areas and other fluid transfer areas will be imperviously paved.</li> <li>• 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.</li> <li>• Applicability of the Hazardous Waste Management Rules.</li> </ul>		
Construction Activity	<p>Health &amp; Safety Risks:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Exposure to health</li> </ul>	<ul style="list-style-type: none"> <li>• All construction equipment will be properly inspected timely.</li> <li>• The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site.</li> <li>• Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting.</li> <li>• Proper Signpost at any slippery areas will be ensured in construction site.</li> <li>• Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire.</li> </ul>	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"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• Adequate quantities of drinking water will be available at all Sites, on different locations within the site.</li> <li>• Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities.</li> <li>• 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.</li> </ul>		

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.)</li> <li>• 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.</li> <li>• Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion.</li> <li>• 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.</li> <li>• Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.</li> </ul>	Contractor	Environmental Consultant of PIU/D&SC.

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
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"> <li>• Pollution from waste materials.</li> <li>• Health &amp; Safety risks to workers and local community.</li> </ul>	<ul style="list-style-type: none"> <li>• Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required;</li> <li>• Ensure that all affected structures rehabilitated/compensated;</li> <li>• 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.</li> <li>• Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic;</li> <li>• 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.</li> <li>• The contractor must arrange the cancellation of all temporary services.</li> </ul>	Contractor	Environmental Consultant of PIU/D&SC, district XEN.
Construction activity	<p>Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna</p>	<ul style="list-style-type: none"> <li>• Preventative maintenance schedule should be followed.</li> <li>• 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</li> </ul>	Contractor	Environmental Consultant of PIU, Union Parishad Member

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		pollution and generating nutrient rich compost soil over time.		
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	<ul style="list-style-type: none"> <li>• The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&amp;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.</li> <li>• Contractor shall submit regular monthly monitoring report to the D&amp;SC and PIU as per reporting standard set by the ES Consultants of D&amp;SC/PIU.</li> </ul>	Contractor	Environmental Consultant of PIU
Operation & Maintenance	<p>Road Safety. Impacts include:</p> <ul style="list-style-type: none"> <li>• The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers.</li> </ul>	<p>Road safety issues can be minimized in following ways:</p> <ul style="list-style-type: none"> <li>• By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety.</li> <li>• 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. Road signage and speed breaker for School (1+279) and road signage for graveyard (0+758) shall be installed/ constructed.</li> <li>• All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.</li> </ul>	UE (Upazila Engineer)	District Executive Engineer, LGED

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<ul style="list-style-type: none"> <li>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.</li> </ul>			
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> <li>Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures.</li> <li>Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.</li> </ul>	Upazila Engineer	District XEN, LGED

### 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><b><u>Grass Turfing</u></b></p> <p>Turfing on embankment top and slope &amp; 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>	2538 Sq.m	@38.15 Tk. Per sqm	96,824.70
2.	<p><b><u>Dust suppression measures</u></b></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>	2115.0m	@ 2.56 BDT	5,414.40
3.	<p><b><u>Water Supply and Sanitation</u></b></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><b><u>First Aid Box</u></b></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</p>	1 no.	LS @5000 Tk. Per box	5,000.00

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SI no.	Description of item	Quantity	Unit price	Total amount
	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 requirement and full satisfaction of Engineer-in-charge.			
5.	<p><b><u>Drinking Water Facilities</u></b></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><b><u>Traffic Management</u></b></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

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SI no.	Description of item	Quantity	Unit price	Total amount
7.	<p><b><u>Personal Protection Equipment for Workers</u></b></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><b><u>Motivation training</u></b></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	10,000.00
9.	<p><b><u>Waste disposal facility</u></b></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	5,000.00
10.	<p><b><u>Water Test (Drinking Water samples)</u></b></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	5,000.00
11.	<p><b><u>Working labour shed:</u></b></p>	1 no.	LS @ Tk. 30,000	30,000.00

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SI no.	Description of item	Quantity	Unit price	Total amount
	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.			
12.	<p><b><u>Environmental management</u></b></p> <p>Environmental management costs of the Environment &amp; Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary &amp; transport (Net payment excluding Tax &amp;VAT). And as per direction of the E.I.C. <a href="#">[One person to be appointed for 6 roads]</a></p>	Each	@ Tk. 35000	35000.00
	<b>Subtotal Bill: Environmental and Social facilities of this road</b>			<b>292,884.82</b>



**Existing Surroundings of the Sub-Project**

**Name of Sub-Project:** Improvement of Community Road for **Mojahar High School to Sail Jura Road, ID: 636445022**

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

**District:** Habiganj

**Upazila:** Sayestaganj

**Union:** Bramandora

**Name of Community/Local Area:** Mominpur

**Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.):** The Mojahar High School to Sail Jura Road includes both unpaved and damaged sections, with unpaved portions from chainage 4+100 to 4+600 and damaged sections from 0+500 to 2+050. Existing pavement includes bituminous carpeting from 0+500 to 4+100, although parts are in deteriorated condition. The proposed intervention includes RCC works from 0+500 to 1+000 and bituminous carpeting from 1+000 to 4+100 to improve structural performance and ensure smooth traffic flow. Existing drainage structures include U-Drains at chainages 1066 m measuring 1.6 m by 7 m, 1268 m measuring 1.5 m by 6 m, 1554 m measuring 1.6 m by 7 m, and 4552 m measuring 1.6 m by 6 m, as well as a culvert measuring 3 m by 5 m at chainage 1797 m. Additional U-Drain sections at chainages 1066 m, 1268 m, and 1554 m will support improved drainage performance. These combined works will enhance accessibility, drainage, and durability. Road safety measures, as well as environmental and social mitigation activities, have been incorporated into the project cost estimates.

Estimated footprint / land area for this sub-project is 14,350.0 sqm.

**Important Environmental and Social Features near site:**

**Detail Chainage Length of the sub-project:** 4100m. Detail Environmental features within 100m of the both sides from the center 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
500-800	L		Pran-RFL School and College 5m, Factory 5m, Mojhar High school (500m), Agricultural Land 300m
		R	Pran-RFL Factory 7m
800-1100	L		Sailjura Bazar 4m, Agricultural Land 500m, Settlement 10m
		R	Sailjura Bazar 5m, Mosque 5m, Madrasha 5m, Settlement 7m
1100-1400	L		Agricultural Land 3m, Settlement 6m
		R	Agricultural Land 20m, Settlement 200m
1400-1700	L		Agricultural Land 15m, Settlement 10m
		R	Agricultural Land 10m, Settlement 10m
1700-2000	L		Agricultural Land 30m, Settlement 10m

Chainage	(Left/Right)		Environment and Social Impact
		R	Agricultural Land 20m, Settlement 7m
2000-2300	L		Agricultural Land 6m, Settlement 10m, Putia GPS 75m
		R	Agricultural Land 5m, Settlement 50m
2300-2600	L		Agricultural Land 20m, Settlement 10m
		R	Agricultural Land 20m, Settlement 10m
2600-2900	L		Agricultural Land 50m, Settlement 5m
		R	Agricultural Land 20m, Settlement 10m
2900-3200	L		Agricultural Land 20m, Settlement 7m
		R	Agricultural Land 30m, Settlement 10m
3200-3500	L		Agricultural Land 20m, Settlement 5m
		R	Agricultural Land 20m, Settlement 30m
3500-3800	L		Agricultural Land 30m, Settlement 100m
		R	Agricultural Land 20m, Settlement 10m
3800-4100	L		Agricultural Land 5m, Settlement 7m
		R	Settlement 7m and 200m
4100-4400	L		Settlement 10m
		R	Settlement 7m, Mosque 5m
4400-4600	L		Settlement 7m
		R	Settlement 8m



**Starting Point of Mojahar High School to Sail Jura 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.

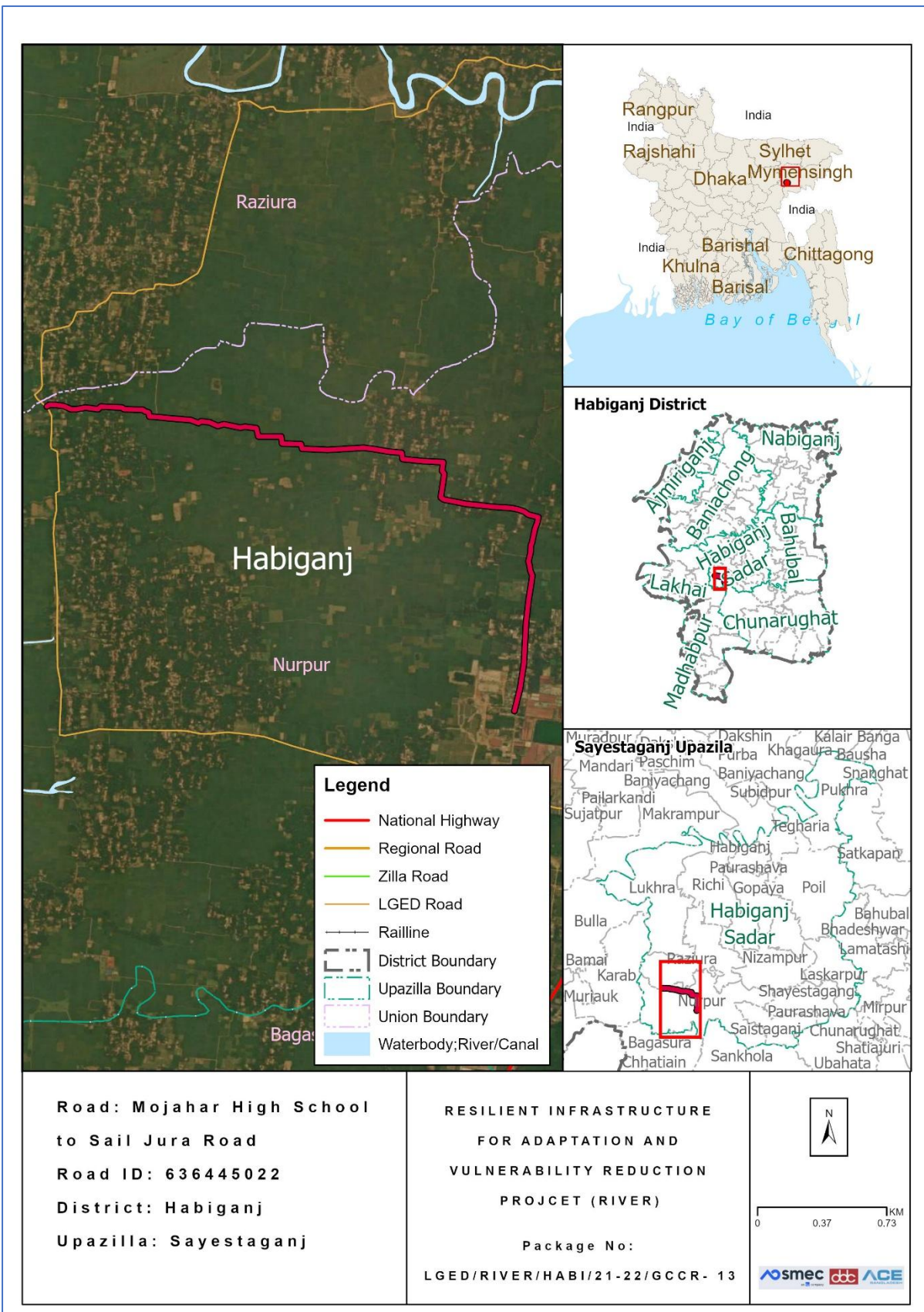
It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation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

No historical or archaeological sites were identified within the influence area. The road corridor includes a mix of educational, commercial, and residential features. Along the left side, Pran-RFL School and College is located within approximately 5 m near Ch. 0+500–0+800, Mojahar High School at approximately 500 m, and Putia Government Primary School at approximately 75 m near Ch. 2+000–2+300. Agricultural land is located within approximately 3 m to 50 m, while settlements are present within approximately 5 m to 100 m. On the right side, Pran-RFL Factory is located within approximately 7 m, Sailjura Bazar within approximately 5 m near Ch. 0+800–1+100, and religious institutions such as mosques and madrasas within approximately 5 m. These features indicate strong socio-economic importance, though no significant impacts are anticipated.



Location Map of the proposed 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 has mixed characteristics such as Bituminous Carpeting (BC) and unpaved/ earthen. According to the design this sub-project will be developed with Reinforced Cement Concrete (RCC) from Ch. 500 to Ch. 1000m Bituminous Carpeting (BC) from Ch. 1000 to Ch. 4600m.

**Sub-project Location:**

Important Features	
ID	636445022
District	Habiganj
Upazila	Sayestaganj
Union	Bramandora
Total Chainage	4600m
Proposed Chainage	4100m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC) Reinforced Cement Concrete (RCC)
Road Starting Point Coordinates	Latitude: 24.27527778 N Longitude: 91.3775 E
Road Ending Point Coordinates	Latitude: 24.29083333 N Longitude: 91.35361111 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:**

- The proposed Sub-project is located within Sailjura, Sherpur village.
- No historical sites were found
- Not required to relocate local community.
- Some trees, vegetation and livelihood will be affected.
- Very low chance of loss of agricultural land.
- 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 environmental features are located within approximately 100 meters of the project site. Along the left side, Pran-RFL School and College is located within approximately 5 m near Ch. 0+500–0+800, Mojahar High School at approximately 500 m, and Putia Government Primary School at approximately 75 m near Ch. 2+000–2+300. Agricultural land is located within approximately 3 m to 50 m, while settlements are present within approximately 5 m to 100 m. On the right side, Pran-RFL Factory is located within approximately 7 m, Sailjura Bazar within approximately 5 m near Ch. 0+800–1+100, and religious institutions such as mosques and madrasas within approximately 5 m. These features indicate strong socio-economic importance, though no significant impacts are anticipated.

#### **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 Habiganj District is situated within the north-eastern floodplain zone of Bangladesh, where soil characteristics differ from the northern districts. The area is predominantly underlain by recent alluvial deposits associated with the Kushiara River and its tributaries. The soils are generally silty clay to clay in texture, with localized occurrences of silty loam in relatively elevated areas. These soils are seasonally influenced by flooding

and prolonged water retention, resulting in moderate to high moisture content throughout much of the year. Due to their fine texture and water-holding capacity, the soils are suitable for paddy cultivation, which is the dominant agricultural practice in the region. In low-lying areas, particularly near haors and beels, the soils remain saturated for extended periods during the monsoon season, further shaping land use patterns and crop selection.

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

Groundwater is the main source of potable water in the sub-project area of Habiganj District. People in the area primarily depend on shallow and intermediate-depth tube wells for their daily domestic water needs. Due to the floodplain and haor-based hydrogeological setting, the groundwater table generally remains at a relatively shallow depth, typically ranging from approximately 80 to 180 feet below ground level, with noticeable seasonal variation between monsoon and dry periods. Groundwater quality assessments indicate the presence of elevated iron concentrations in many tube wells, which may cause aesthetic issues such as discoloration, metallic taste, and staining if consumed without treatment. However, arsenic contamination in this region is generally low to negligible compared to other parts of Bangladesh. Therefore, appropriate public health measures, including installation of iron removal plants, periodic water quality testing, and community awareness programs, are essential to ensure safe drinking water. In some locations, deeper tube wells tapping relatively stable aquifers are used for drinking purposes to obtain comparatively better water quality.

Groundwater quality: pH-6.20 to 7.85, DO-3.10 to 6.90 mg/l, TDS-60.00 to 280 mg/l, EC-80 to 620  $\mu$ S/cm, Fe-0.8 to 5.5 mg/l and As-trace to Nil (Field Study Report, March 2026).

**Status of wildlife movement:**

The sub-project area in Habiganj District is characterized by a rich wetland-dependent biodiversity typical of the haor basin ecosystem. The area supports a variety of aquatic and semi-aquatic bird species commonly observed in seasonal wetlands, agricultural fields, and homestead vegetation. Frequently recorded species include pankouri (cormorant), dahuk (white-breasted waterhen), and various types of ducks and herons, which are adapted to the extensive waterlogged environment. These birds play an important role in maintaining ecological balance through fish predation, insect control, and nutrient cycling within wetland ecosystems. In addition, the presence of small wild mammals and reptiles, such as otter (*Lutra* spp.), mongoose, and different species of snakes, reflects the ecological characteristics of the haor region. These species contribute to controlling fish predators, rodents, and other small organisms, thereby supporting both natural ecosystems and local agricultural practices. The abundance of fish species in nearby beels and haors further highlights the productivity of the aquatic ecosystem. Overall, the composition of birds, mammals, and aquatic fauna in the area indicates a dynamic and water-dependent ecosystem, and the conservation of these habitats through sustainable wetland management, protection of natural water bodies, and environmentally responsible development is essential for maintaining biodiversity, ecological stability, and long-term environmental sustainability in the locality.

**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. Solid waste may amount to 20 kg daily and sludge may amount to 5 kg per day.

### B.3: Construction Phase

<p><b>Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.):</b>                  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><b>Type and quantity of raw materials used (wood, bricks, cement, water, etc.):</b>  <b>Type:</b> 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><b>Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:</b>                  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><b>Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)</b>                  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><b>Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)</b>                  No formal engineered drainage system exists along this road alignment, and no major natural drainage features such as ponds, canals, or rivers are located in close proximity to the road. The alignment is predominantly surrounded by agricultural land and settlements at varying distances, which facilitate natural infiltration and surface runoff. Given the absence of significant water bodies near the corridor, the potential impact on drainage is low. However, standard environmental management practices will be followed to ensure that natural runoff is not obstructed during construction.</p>
<p><b>Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)</b>                  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><b>Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:</b>                  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><b>Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)</b></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: Mojahar High School to Sail Jura Road**

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

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>officials/employees will be provided, and ensure regular cleaning of those.</p> <ul style="list-style-type: none"> <li>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.</li> </ul>		
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	<ul style="list-style-type: none"> <li>Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor &amp; approved by the Environmental Specialist of D&amp;SC.</li> <li>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.</li> <li>Provision of waste bins/ cans, where appropriate,</li> <li>Litter is to be collected daily.</li> <li>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&amp;SC.</li> <li>Camp and working areas are to be kept clean and tidy at all times.</li> </ul>	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"> <li>• 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.</li> <li>• Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it.</li> <li>• 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.</li> </ul>		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• After completing the development, the site shall be restored as before.</li> </ul>	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"> <li>This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place.</li> <li>Sub project intervention must avoid natural disturbance to existing slop and natural drainage.</li> </ul>		
Construction Activity	Noise from construction works	<ul style="list-style-type: none"> <li>Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance.</li> <li>All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works.</li> <li>Noise producing vehicles and equipment will be keep in maintenance regularly.</li> <li>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.</li> </ul>	Contractor	Environmental Consultant of PIU
Construction Activity	Dust	<ul style="list-style-type: none"> <li>Acceptable range of emission of CO, particulate matter [SPM (<b>Suspended particulate matter</b>), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices.</li> <li>Dust generation must be limited as a result of clearing, leveling and site grading operations with</li> </ul>	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>using water florescent manually and through water pipes.</p> <ul style="list-style-type: none"> <li>• Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level.</li> <li>• Construction materials should be covered properly while carrying in vehicles to the site.</li> </ul>		
Construction Activity	Safety Issues	<ul style="list-style-type: none"> <li>• 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)</li> <li>• Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff.</li> <li>• Records of every training must be kept at site.</li> <li>• All kinds of Child labour are completely prohibited in every site.</li> <li>• Every construction materials storage site will be well fenced by Tin and safety caution tape.</li> </ul>	Contractor	Environmental Consultant of PIU
Construction Activity	Traffic Management	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	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"> <li>• Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer.</li> <li>• Local traffic police department should be contacted, if traffic problem becomes more complex.</li> </ul>		
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> <li>• Maintain safety measures during the movement of heavy machinery and equipment.</li> <li>• Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community.</li> <li>• Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.)</li> <li>• Local community will be trained up on traffic management and awareness.</li> </ul>	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling.</li> <li>• Adequate facilities ensuring sanitation for labor camps will be put in place.</li> <li>• Treated water will be made available at site for</li> </ul>	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		drinking purpose. <ul style="list-style-type: none"> <li>• Adequate accommodation arrangements for labor forces.</li> <li>• Labor code of conduct is to be disclosed through consultation.</li> </ul>		
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> <li>• A separate grievance mechanism for workers has to be established for the work package.</li> <li>• Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner.</li> <li>• 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.</li> </ul>		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: <ul style="list-style-type: none"> <li>• Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site.</li> <li>• 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.</li> </ul>	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"> <li>• Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.</li> <li>• Refueling areas and other fluid transfer areas will be imperviously paved.</li> <li>• 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.</li> <li>• Applicability of the Hazardous Waste Management Rules.</li> </ul>		
Construction Activity	<p>Health &amp; Safety Risks:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Exposure to health</li> </ul>	<ul style="list-style-type: none"> <li>• All construction equipment will be properly inspected timely.</li> <li>• The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site.</li> <li>• Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting.</li> <li>• Proper Signpost at any slippery areas will be ensured in construction site.</li> <li>• Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire.</li> </ul>	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"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• Adequate quantities of drinking water will be available at all Sites, on different locations within the site.</li> <li>• Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities.</li> <li>• 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.</li> </ul>		
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> <li>• Ensure monitoring of nearby surface and underground water bodies for signs of contamination.</li> </ul>	Contractor	Environmental Consultant of

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.</p> <ul style="list-style-type: none"> <li>• 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.)</li> <li>• 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.</li> <li>• Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion.</li> <li>• 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.</li> <li>• Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.</li> </ul>		PIU/D&SC.
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance	<ul style="list-style-type: none"> <li>• Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required;</li> <li>• Ensure that all affected structures rehabilitated/compensated;</li> <li>• The area that previously housed the construction camp</li> </ul>	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>after the construction). The impacts are similar to those listed in construction stage:</p> <ul style="list-style-type: none"> <li>• Pollution from waste materials.</li> <li>• Health &amp; Safety risks to workers and local community.</li> </ul>	<p>is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up.</p> <ul style="list-style-type: none"> <li>• Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic;</li> <li>• 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.</li> <li>• The contractor must arrange the cancellation of all temporary services.</li> </ul>		
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"> <li>• Preventative maintenance schedule should be followed.</li> <li>• 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.</li> </ul>	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"> <li>• The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&amp;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.</li> </ul>	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"> <li>Contractor shall submit regular monthly monitoring report to the D&amp;SC and PIU as per reporting standard set by the ES Consultants of D&amp;SC/PIU.</li> </ul>		
Operation & Maintenance	<p>Road Safety. Impacts include:</p> <ul style="list-style-type: none"> <li>The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers.</li> <li>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.</li> </ul>	<p>Road safety issues can be minimized in following ways:</p> <ul style="list-style-type: none"> <li>By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety.</li> <li>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. Appropriate signage, barricades, and speed breakers will be installed near schools and market areas.</li> <li>All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.</li> </ul>	UE (Upazila Engineer)	District Executive Engineer, LGED
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> <li>Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures.</li> <li>Provision to take necessary lighting, caution for the</li> </ul>	Upazila Engineer	District XEN, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		works and necessary maintenance should be done in day light.		

### 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.	<b><u>Grass Turfing</u></b> 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)	4920 Sqm	@38.15 Tk. Per sqm	187,698.00
2.	<b><u>Dust suppression measures</u></b> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	4100m	@ 2.56 BDT	10,496.00
3.	<b><u>Water Supply and Sanitation</u></b> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge.	2 nos.	@12822.86 per toilet	25,645.72

Sl no.	Description of item	Quantity	Unit price	Total amount
	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.			
4.	<p><b><u>First Aid Box</u></b></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 requirement and full satisfaction of Engineer-in-charge.</p>	1 no.	LS @5000 Tk. Per box	5,000
5.	<p><b><u>Drinking Water Facilities</u></b></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><b><u>Traffic Management</u></b></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

Sl no.	Description of item	Quantity	Unit price	Total amount
7.	<p><b><u>Personal Protection Equipment for Workers</u></b></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><b><u>Motivation training</u></b></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
9.	<p><b><u>Waste disposal facility</u></b></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><b><u>Water Test (Drinking Water samples)</u></b></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
11.	<p><b><u>Working labour shed:</u></b></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

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SI no.	Description of item	Quantity	Unit price	Total amount
12.	<p><b><u>Environmental management</u></b></p> <p>Environmental management costs of the Environment &amp; Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary &amp; transport (Net payment excluding Tax &amp;VAT). And as per direction of the E.I.C.  <a href="#">[One person to be appointed for 6 roads]</a></p>	1 no.	@ Tk. 35000	35,000
	<b>Subtotal Bill: Environmental facilities</b>			<b>388,839.72</b>



**Existing Surroundings of the Sub-Project**

**Name of Sub-Project:** Improvement of Community Road for **Madna road to lakhai R& H road via Bamkhandi, ID: 636445023**

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

**District:** Habiganj

**Upazila:** Habiganj Sadar

**Union:** Lukra

**Name of Community/Local Area:** Bamkhandi

**Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.):** The Madna Road to Lakhai R and H Road via Bamkhandi is currently a damaged bituminous road from chainage 0+000 to 1+150. The proposed intervention includes the construction of a Uni-Block pavement along the entire stretch to improve durability and resilience. Existing drainage structures include a U-Drain measuring 1.5 m by 5.5 m at chainage 324 m and culverts at chainages 8 m measuring 3 m by 5 m and 839 m measuring 3.6 m by 5.6 m. A new culvert measuring 3 m by 3 m is proposed at chainage 8 m to improve drainage capacity. Existing palisading is present at 0+600 to 0+650 on the right side and 0+777 to 0+800 on the right side, while additional palisading is proposed at 0+012 to 0+022 on the left side, 0+066 to 0+128 on the left side, 0+271 to 0+400 on the right side, and 0+845 to 0+866 on the right side. These interventions will strengthen the road structure, improve drainage, and enhance long-term performance. In addition, appropriate road safety features, as well as environmental and social mitigation measures, have been incorporated into the project design and cost estimates.

Estimated footprint / land area for this sub-project is 4,025.0 sqm.

**Important Environmental and Social Features near site:**

Detail Chainage Length of the sub-project: 1150m. 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 10m, Bazar 6m, Agricultural Land 20m
		R	102 no. Bamkandi GPS, Bamkandi Highschool 5m, Agricultural Land 60m, Canal 7m
300-600	L		Settlement 20m, Mosque 12m, Agricultural Land 300m
		R	Settlement 8m, Shops 5m
600-900	L		Pond 5m, Settlement 2m, Agricultural Land 10m
		R	Settlement 3m, Pond 5m
900-1200	L		Agricultural Land 5m, Settlement 7m
		R	Agricultural Land 5m, Settlement 5m



**Starting Point of Madna road to lakhai R& H road via Bamkhandi**

### **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

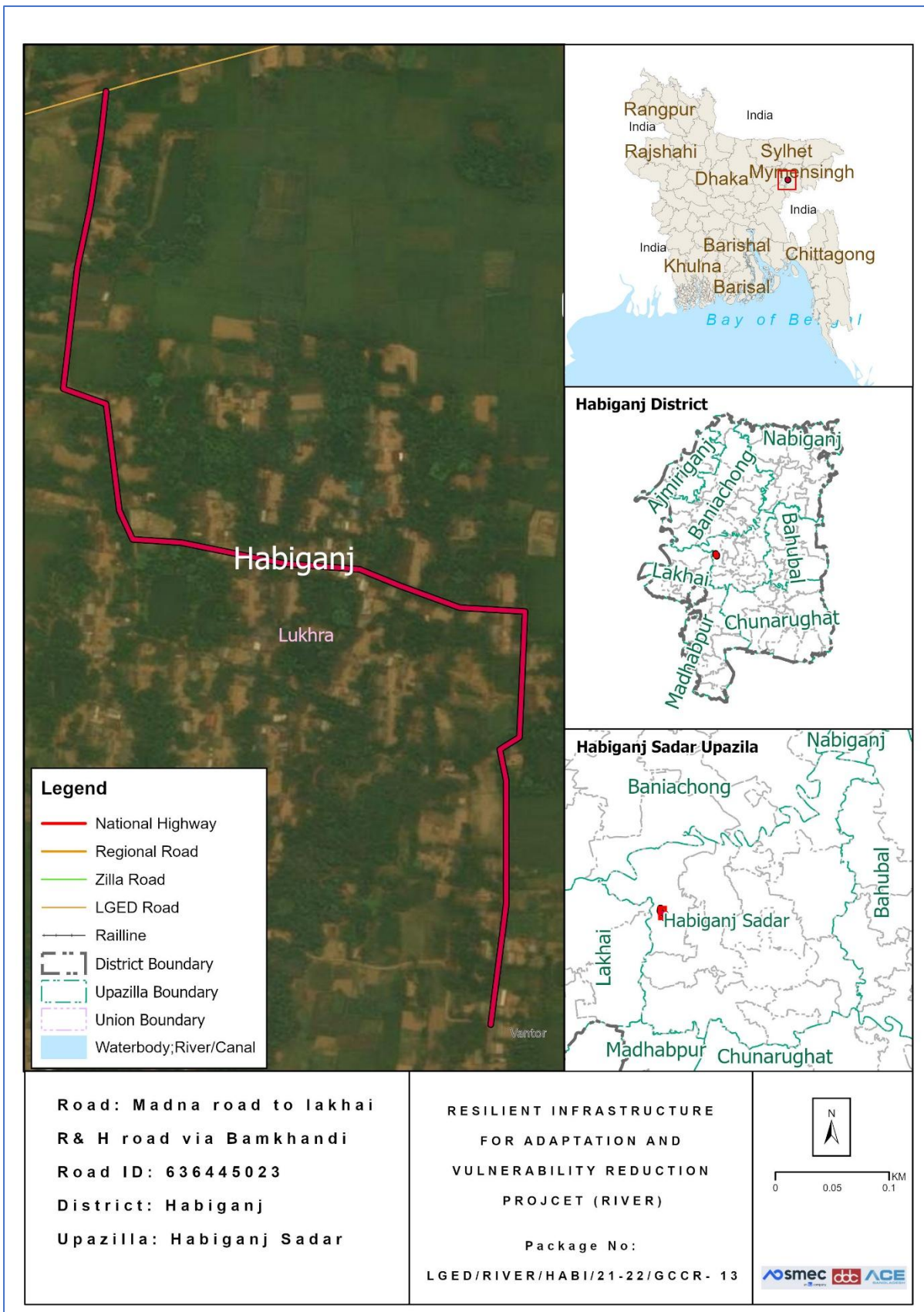
and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects.

**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:**

No historical or archaeological sites were identified within the project area. The alignment passes through areas characterized by settlements, agricultural land, and local institutions. Along the left side, settlements are located within approximately 10 m to 20 m across sections such as 0+000–0+300 and 0+300–0+600, bazaars within approximately 6 m, agricultural land within approximately 5 m to 300 m, and a mosque within approximately 12 m. On the right side, Bamkandi Government Primary School and Bamkandi High School are located within approximately 5 m near Ch. 0+000–0+300, along with a canal within approximately 7 m. Additional features include shops, ponds within approximately 5 m, and settlements within approximately 3 m to 8 m. These features represent important community and environmental elements, though no significant disturbance is anticipated due to alignment-based construction.



Location Map of the proposed 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 is paved with Bituminous Carpeting (BC). According to the design this sub-project will be developed with Uni-Block from Ch. 00 to Ch. 1150m.

**Sub-project Location:**

Important Features	
ID	636445023
District	Habiganj
Upazila	Habiganj Sadar
Union	Lukra
WARD	
Total Chainage	1150m
Proposed Chainage	1150m
Road Type	Village Road
Proposed Intervention Type	Uni-Block
Road Starting Point Coordinates	Latitude: 24.34638889 N Longitude: 91.35111111 E
Road Ending Point Coordinates	Latitude: 24.33916667 N Longitude: 91.35388889 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:**

- The proposed Sub-project is located within Bamkhandi villages
- No historical sites were found
- Not required to relocate local community.
- Some trees, vegetation and livelihood will be affected.
- Very low chance of loss of agricultural land.
- 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 environmental and community features are located within approximately 100 meters of the project site. Along the left side, settlements are located within approximately 10 m to 20 m across sections such as 0+000–0+300 and 0+300–0+600, bazaars within approximately 6 m, agricultural land within approximately 5 m to 300 m, and a mosque within approximately 12 m. On the right side, Bamkandi Government Primary School and Bamkandi High School are located within approximately 5 m near Ch. 0+000–0+300, along with a canal within approximately 7 m. Additional features include shops, ponds within approximately 5 m, and settlements within approximately 3 m to 8 m. These features represent important community and environmental elements, though no significant disturbance is anticipated due to alignment-based 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 Habiganj District is situated within the north-eastern floodplain zone of Bangladesh, where soil characteristics differ from the northern districts. The area is predominantly underlain by recent alluvial deposits associated with the Kushiara River and its tributaries. The soils are generally silty clay to clay in texture, with localized occurrences of silty loam in relatively elevated areas. These soils are seasonally influenced by flooding and prolonged water retention, resulting in moderate to high moisture content throughout much of the year. Due to their fine texture and water-holding capacity, the soils are suitable for paddy cultivation, which is the dominant agricultural practice in the region. In low-lying areas, particularly near haors and beels, the soils remain saturated for extended periods during the monsoon season, further shaping land use patterns and crop selection.

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

Groundwater is the main source of potable water in the sub-project area of Habiganj District. People in the area primarily depend on shallow and intermediate-depth tube wells for their daily domestic water needs. Due to the floodplain and haor-based hydrogeological setting, the groundwater table generally remains at a relatively shallow depth, typically ranging from approximately 80 to 180 feet below ground level, with noticeable seasonal variation between monsoon and dry periods. Groundwater quality assessments indicate the presence of elevated iron concentrations in many tube wells, which may cause aesthetic issues such as discoloration, metallic taste, and staining if consumed without treatment. However, arsenic contamination in this region is generally low to negligible compared to other parts of Bangladesh. Therefore, appropriate public health measures, including installation of iron removal plants, periodic water quality testing, and community awareness programs, are essential to ensure safe drinking water. In some locations, deeper tube wells tapping relatively stable aquifers are used for drinking purposes to obtain comparatively better water quality.

Groundwater quality: pH-6.20 to 7.85, DO-3.10 to 6.90 mg/l, TDS-60.00 to 280 mg/l, EC-80 to 620  $\mu$ S/cm, Fe-0.8 to 5.5 mg/l and As-trace to Nil (Field Study Report, March 2026).

**Status of wildlife movement:**

The sub-project area in Habiganj District is characterized by a rich wetland-dependent biodiversity typical of the haor basin ecosystem. The area supports a variety of aquatic and semi-aquatic bird species commonly observed in seasonal wetlands, agricultural fields, and homestead vegetation. Frequently recorded species include pankouri (cormorant), dahuk (white-breasted waterhen), and various types of ducks and herons, which are adapted to the extensive waterlogged environment. These birds play an important role in maintaining ecological balance through fish predation, insect control, and nutrient cycling within wetland ecosystems. In addition, the presence of small wild mammals and reptiles, such as otter (*Lutra* spp.), mongoose, and different species of snakes, reflects the ecological characteristics of the haor region. These species contribute to controlling fish predators, rodents, and other small organisms, thereby supporting both natural ecosystems and local agricultural practices. The abundance of fish species in nearby beels and haors further

highlights the productivity of the aquatic ecosystem. Overall, the composition of birds, mammals, and aquatic fauna in the area indicates a dynamic and water-dependent ecosystem, and the conservation of these habitats through sustainable wetland management, protection of natural water bodies, and environmentally responsible development is essential for maintaining biodiversity, ecological stability, and long-term environmental sustainability in the locality.

**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. 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)**  
 No formal drainage system is present along this alignment; however, several natural drainage features exist. A canal is located on the right side at chainage 0–300 m within approximately 7 m from the centerline. Ponds are observed on both sides at chainage 600–900 m within approximately 5 m. Additionally, surrounding agricultural land across the alignment supports natural drainage and water infiltration. These features contribute to maintaining local hydrological balance. As the proposed works will be confined within the existing alignment, temporary disturbances may occur during construction, and therefore appropriate mitigation measures will be required to maintain uninterrupted water flow.

**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.).
<b>Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:</b> 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.
<b>Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)</b> 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.
<b>Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:</b> 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

<b>Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:</b> No
<b>Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)</b> No
<b>Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)</b> No.
<b>Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)</b> There is no possibility of stagnant water bodies remained for encouraging mosquito breeding and other disease vectors, during the operation phase.
<b>Likely direct and indirect impacts on economic development in the project areas by the sub-project:</b> 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.
<b>Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)</b>

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: Madna Road to Lakhai R&H Road via Bamkhandi**

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"> <li>All of the project stakeholders should be consulted</li> <li>Separate community level consultation meeting with the potential affected HHs</li> <li>All the safeguard documents will be disclosed to all relevant stakeholders.</li> <li>People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.</li> </ul>	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	<ul style="list-style-type: none"> <li>Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact.</li> <li>In case of unavoidable circumstances, alternative access will be provided.</li> </ul>	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/	<ul style="list-style-type: none"> <li>Transportation of construction materials to the site will be carried out by covering the materials as a whole.</li> <li>Store the materials in designated places, with proper fencing and coverings.</li> </ul>	Contractor	Environmental Consultant of PIU

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	local people, generating dust and noise)			
Pre-Construction Stage	Sanitation and water supply	<ul style="list-style-type: none"> <li>• Sanitation facilities (male and female toilets with septic tanks, wash-basins, etc.) for workers and constructor’s officials/employees will be provided, and ensure regular cleaning of those.</li> <li>• 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.</li> </ul>	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"> <li>• Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor &amp; approved by the Environmental Specialist of D&amp;SC.</li> <li>• 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.</li> <li>• Provision of waste bins/ cans, where appropriate,</li> </ul>	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"> <li>• Litter is to be collected daily.</li> <li>• 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&amp;SC.</li> <li>• Camp and working areas are to be kept clean and tidy at all times.</li> <li>• 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.</li> <li>• Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it.</li> <li>• 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.</li> </ul>		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Construction facilities including materials are to be placed at least 10m distance from any water</li> </ul>	PIU & Contractor	Environmental Consultant of PIU

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Environmental & Social Assessment and Management Report of Community Roads for Habiganj District

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>body in order to minimize the impacts on water bodies and natural water flow.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• After completing the development, the site shall be restored as before.</li> <li>• This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place.</li> <li>• Sub project intervention must avoid natural disturbance to existing slop and natural drainage.</li> </ul>		
Construction Activity	Noise from construction works	<ul style="list-style-type: none"> <li>• Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance.</li> <li>• All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works.</li> <li>• Noise producing vehicles and equipment will be keep in maintenance regularly.</li> <li>• Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the</li> </ul>	Contractor	Environmental Consultant of PIU

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

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		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"> <li>• Acceptable range of emission of CO, particulate matter [SPM (<b>Suspended particulate matter</b>), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices.</li> <li>• Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes.</li> <li>• Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level.</li> <li>• Construction materials should be covered properly while carrying in vehicles to the site.</li> </ul>	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	<ul style="list-style-type: none"> <li>• 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)</li> </ul>	Contractor	Environmental Consultant of PIU

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

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> <li>• Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff.</li> <li>• Records of every training must be kept at site.</li> <li>• All kinds of Child labour are completely prohibited in every site.</li> <li>• Every construction materials storage site will be well fenced by Tin and safety caution tape.</li> </ul>		
Construction Activity	Traffic Management	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer.</li> <li>• Local traffic police department should be contacted, if traffic problem becomes more complex.</li> </ul>	Contractor	Environmental Consultant of PIU
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> <li>• Maintain safety measures during the movement of heavy machinery and equipment.</li> </ul>	Contractor	Environmental Consultant of PIU

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

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> <li>• Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community.</li> <li>• Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.)</li> <li>• Local community will be trained up on traffic management and awareness.</li> </ul>		
Construction Activity	Labor Base Camp: Conflicts with the local residents	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling.</li> <li>• Adequate facilities ensuring sanitation for labor camps will be put in place.</li> <li>• Treated water will be made available at site for drinking purpose.</li> <li>• Adequate accommodation arrangements for labor forces.</li> <li>• Labor code of conduct is to be disclosed through</li> </ul>	Contractor	Social Development Specialist and Gender Specialist of PIU

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

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		consultation.		
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> <li>• A separate grievance mechanism for workers has to be established for the work package.</li> <li>• Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner.</li> <li>• 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.</li> </ul>		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	<p>Preparation of a waste management plan covering the following aspects:</p> <ul style="list-style-type: none"> <li>• Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site.</li> <li>• 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.</li> <li>• Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and</li> </ul>	Contractor	Environmental Consultant of PIU

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

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>subsequently sold to authorized recyclers.</p> <ul style="list-style-type: none"> <li>• Refueling areas and other fluid transfer areas will be imperviously paved.</li> <li>• 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.</li> <li>• Applicability of the Hazardous Waste Management Rules.</li> </ul>		
Construction Activity	<p>Health &amp; Safety Risks:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Exposure to health</li> </ul>	<ul style="list-style-type: none"> <li>• All construction equipment will be properly inspected timely.</li> <li>• The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site.</li> <li>• Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting.</li> <li>• Proper Signpost at any slippery areas will be ensured in construction site.</li> <li>• Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire.</li> </ul>	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU

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

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"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• Adequate quantities of drinking water will be available at all Sites, on different locations within the site.</li> <li>• Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities.</li> <li>• 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.</li> </ul>		

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

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.)</li> <li>• 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.</li> <li>• Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion.</li> <li>• 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.</li> <li>• Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.</li> </ul>	Contractor	Environmental Consultant of PIU/D&SC.

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

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
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"> <li>• Pollution from waste materials.</li> <li>• Health &amp; Safety risks to workers and local community.</li> </ul>	<ul style="list-style-type: none"> <li>• Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required;</li> <li>• Ensure that all affected structures rehabilitated/compensated;</li> <li>• 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.</li> <li>• Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic;</li> <li>• 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.</li> <li>• The contractor must arrange the cancellation of all temporary services.</li> </ul>	Contractor	Environmental Consultant of PIU/D&SC, district XEN.
Construction activity	<p>Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna</p>	<ul style="list-style-type: none"> <li>• Preventative maintenance schedule should be followed.</li> <li>• 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</li> </ul>	Contractor	Environmental Consultant of PIU, Union Parishad Member

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

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		pollution and generating nutrient rich compost soil over time.		
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	<ul style="list-style-type: none"> <li>• The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&amp;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.</li> <li>• Contractor shall submit regular monthly monitoring report to the D&amp;SC and PIU as per reporting standard set by the ES Consultants of D&amp;SC/PIU.</li> </ul>	Contractor	Environmental Consultant of PIU
Operation & Maintenance	<p>Road Safety. Impacts include:</p> <ul style="list-style-type: none"> <li>• The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers.</li> </ul>	<p>Road safety issues can be minimized in following ways:</p> <ul style="list-style-type: none"> <li>• By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety.</li> <li>• 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. Road signage and speed breaker for School (1+279) and road signage for graveyard (0+758) shall be installed/ constructed.</li> <li>• All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.</li> </ul>	UE (Upazila Engineer)	District Executive Engineer, LGED

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

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<ul style="list-style-type: none"> <li>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.</li> </ul>			
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> <li>Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures.</li> <li>Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.</li> </ul>	Upazila Engineer	District XEN, LGED

### 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><b><u>Grass Turfing</u></b></p> <p>Turfing on embankment top and slope &amp; 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>	1380.00 Sq.m	@38.15 Tk. Per sqm	52,647.00
2.	<p><b><u>Dust suppression measures</u></b></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>	1150.0 m	@ 2.56 BDT	2,944.00
3.	<p><b><u>Water Supply and Sanitation</u></b></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. 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><b><u>First Aid Box</u></b></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</p>	1 no.	LS @5000 Tk. Per box	5,000

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

Sl no.	Description of item	Quantity	Unit price	Total amount
	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><b><u>Drinking Water Facilities</u></b></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><b><u>Traffic Management</u></b></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><b><u>Personal Protection Equipment for Workers</u></b></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

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

Sl no.	Description of item	Quantity	Unit price	Total amount
8.	<p><b><u>Motivation training</u></b></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
9.	<p><b><u>Waste disposal facility</u></b></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><b><u>Water Test (Drinking Water samples)</u></b></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
11.	<p><b><u>Working labour shed:</u></b></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
12.	<p><b><u>Environmental management</u></b></p> <p>Environmental management costs of the Environment &amp; Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary &amp; transport (Net payment excluding Tax &amp;VAT). And as per direction of the E.I.C. <a href="#">[One person to be appointed for 6 roads]</a></p>	Each	@ Tk. 35000	35,000
<b>Subtotal Bill: Environmental facilities</b>				<b>246,236.72</b>



**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: Mahatabpur - Bonpur Road Date: 29-03-26  
 Road ID: 636025040  
 Place of Consultation: Alipur Mahatabpur  
 Village: Mahatabpur Ward No.: 08 Union: 4 no. Kakaolehawa Upazila: Ajmirsigonj  
 District:

**Public Consultation Participants List**

Sl. No.	Name	Male/ Female	Age	Occupation	Village/Address	Mobile No.	Signature
01	Ajejun Rahman		65	UP member	mahatabpur (w-08)		[Signature]
02	MD Musujma		50	UP member	mahatabpur (w-08)		[Signature]
03	MD. Mubarak		38	Farmer	mahatabpur (w-08)		[Signature]
04	Sonallah		45	Farmer	mahatabpur (w-08)		[Signature]
05	MD Tajuddin		40	Farmer	mahatabpur (w-08)		[Signature]
06	Sutajul		42	Farmer	mahatabpur (w-08)		[Signature]
07	Azizul Hoque		60	Farmer	mahatabpur (w-08)		[Signature]
08	Amiruddin		40	Driver	Amiruddin (w-07)		[Signature]
09	Abu Bakr Siddik		40	Business	4 no Kakaolehawa Alipur		[Signature]
10	Debal Chaudhury		45	Farmer	4 no Kakaolehawa mahatabpur		[Signature]
11	Husain		29	Employee	4 no Kakaolehawa mahatabpur		[Signature]
12	Abdus Mia		40	Farmer	4 no Kakaolehawa (w-08) mahatabpur		[Signature]
13	Alangia Mia		35	Farmer	4 no Kakaolehawa mahatabpur (w-08)		[Signature]
14	MD Rimon		21	Farmer	4 no Kakaolehawa mahatabpur (w-08)		[Signature]
15	MD Nadin Jaman		45	Farmer	4 no Kakaolehawa mahatabpur (w-08)		[Signature]
16	Abdul Kaium		40	Farmer	4 no Kakaolehawa mahatabpur (w-08)		[Signature]

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project

Local Government Engineering Department (LGED)

Public Consultation with Stakeholders

Name of Community Road: Rampur-(DR)- Tegoria Up -Tangirghat Road Date: 26/03/2026

Road ID: 636443006

Place of Consultation: Tangirghat APS

Village: Tangirghat

Ward No.: 03

Union: Tegoria

Upazila: Habiganj Sadar

District: Habiganj

Public Consultation Participants List

Sl. No.	Name	Male/ Female	Age	Occupation	Village/Address	Mobile No.	Signature
01	MD. Mostafiz Ali	Male	62	UP member Farmer	Tangirghat (W. 03)		[Signature]
02	MD. Ahsan ali	Male	70	Fisherman	Tangirghat (W. 03)		[Signature]
03	Abdul Munhab	Male	70	Fisherman	Tangirghat (W. 03)		[Signature]
04	MD Taibullah	Male	45	Fisherman	Tangirghat (W. 03)		[Signature]
05	Abdull Ali	Male	38	Farmer	Tangirghat (W. 03)		[Signature]
06	MD. Kaziul mia	Male	35	Fisherman	Tangirghat (W. 03)		[Signature]
07	MD. Sajad Ali	Male	40	Fisherman	Tangirghat (W. 03)		[Signature]
08	MD. Temu mia	Male	40	Fisherman	Tangirghat (W. 03)		[Signature]
09	MD. Saad mia	Male	46	Fisherman	Tangirghat (W. 03)		[Signature]
10	MD. Tazajal mia	Male	23	Employee	Tangirghat (W. 03)		[Signature]
11	Toskin Ahommed	Male	20	Student	Tangirghat (W. 03)		[Signature]
12	MD. Abebur Rahman	Male	20	Student	Tangirghat (W. 03)		[Signature]
13	Osma mia	Male	40	Fisherman	Tangirghat (W. 03)		[Signature]
14	MD. Salman Khan	Male	20	Student	Tangirghat (W. 03)		[Signature]
15	MD. Masid mia	Male	50	Fisherman	Tangirghat (W. 03)		[Signature]
16	MD. Sumon mia	Male	33	Farmer	Tangirghat (W. 03)		[Signature]

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project

Local Government Engineering Department (LGED)

Public Consultation with Stakeholders

Name of Community Road: Tutukhari - Chandpur - Mirzapur Road via to Sobhapur Bazar Date: 25/03/2026

Road ID: ~~60644063~~ 636 44063

Place of Consultation: Chanpur bazar

Village: Chanpur

Ward No.: 01

Union: Lukra

Upazila: Habiganj Sadar

District: Habiganj

Public Consultation Participants List

Sl. No.	Name	Male/Female	Age	Occupation	Village/Address	Mobile No.	Signature
1	Mf. Jonayed	Male	35	farmer	Chanpur		
2	Kamrul Islam	male	26	Business	Chanpur		
3	Tause Mia	Male	60	farmer	Chanpur		
4	Zahidul Islam	Male	35	Teacher	Chanpur		
5	Jalal Mia	Male	40	Driver	Chanpur		
6	Md Tajul Islam	male	40	Driver	Chanpur		
7	Abdul Jabbar	Male	55	farmer	Chanpur		
8	Mainul	Male	40	farmer	Chanpur		
9	Mojid	Male	40	farmer	Chanpur		
10	Abdur Shohid	Male	65	farmer	Chanpur		
11	Fahim	Male	45	farmer	Chanpur		
12	Md. Mozammel Haq	Male	56	farmer	Chanpur		
13	Sabaz	Male	45	farmer	Chanpur		
14	Al-Amin	Male	50	farmer	Chanpur		
15	Hapiz	Male	55	farmer	Chanpur		
16	Mujahid	Male	45	farmer	Chanpur		
17	Sohel	Male	50	Driver	Chanpur		
18	Mojid	Male	40	farmer	Chanpur		
19	Siraj	Male	55	farmer	Chanpur		
20	Anar	Male	40	farmer	Chanpur		

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project

Local Government Engineering Department (LGED)

Public Consultation with Stakeholders

Name of Community Road: *Dariapun - Sujatpun Govt. Eng. School Road* Date: *27.03.26*  
 Road ID: *636945050*  
 Place of Consultation: *Dariapun Bazar*  
 Village: *Dariapun* Ward No.: *09* Union: *Nizampan* Upazila: *Sadar*  
 District: *Habiganj*

Public Consultation Participants List

Sl. No.	Name	Male/Female	Age	Occupation	Village/Address	Mobile No.	Signature
01	MD. mahibun Rahman	Male	42	Business	Dariapun 09		<i>[Signature]</i>
02	MD. Shijul Alam	Male	30	Business	Dariapun 09		<i>[Signature]</i>
03	Sajjan Rahman Ripon	Male	45	Business	Dariapun 09		<i>[Signature]</i>
04	Nirmal Islam	Male	24	Business	Dariapun 09		<i>[Signature]</i>
05	Mo. Akbar Ali	Male	60	Business	Dariapun 09		<i>[Signature]</i>
06	Abdul mio	Male	48	Business	Dariapun 09		<i>[Signature]</i>
07	Mo. mathu mia	Male	50	Business	Dariapun 09		<i>[Signature]</i>
08	Abdul Samad	Male	65	Business	Dariapun 09		<i>[Signature]</i>
09	Abdul Aziz	Male	80	Former Police man	Dariapun 09		<i>[Signature]</i>
10	Alamin	Male	30	Teacher	Dariapun 09		<i>[Signature]</i>
11	MD. Klil mio	Male	42	Farmer	Dariapun 09		<i>[Signature]</i>

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project

Local Government Engineering Department (LGED)

Public Consultation with Stakeholders

Name of Community Road: Mojahaz High school to Sailjura Road

Date: 26/03/2026

Road ID: 63644022

Place of Consultation: Shailowsona Bazar

Village: Shailowsona

Ward No.: 03

Union: Bramondora

Upazila: Soyestaganj

District: Habiganj

Public Consultation Participants List

Sl. No.	Name	Male/ Female	Age	Occupation	Village/Address	Mobile No.	Signature
01	Md. Dikush miach	Male	40	Farmer	Shailjura, word-03 No		
02	Babul miach	male	58	Business	Shailowsona word-03		
03	Julfar miach	male	40	farmer	Shailowsona word-03		
04	Atul miach	Male	60	farmer	Shailowsona word-03		
05	Abdul Samad	male	62	farmer	Shailowsona word-03		
06	Md. Alam miach	male	35	Driver	Putha, word-04, Bramondora		
07	Sumon miach	male	32	Driver	Shailowsona word-01		
08	Makhan miach	male	47	farmer	Shailowsona word-03		
09	Abul Mannan	male	80	farmer	Shailowsona word-03		
10	Khatir miach	male	70	farmer	Shailowsona word-03		
11	Hemayon Talukder	male	48	Business	Putha, word-04		
12	Cham miach	male	40	Driver	Putha word-4		
13	Md. Monir	Male	42	Business	Putha, word-4		
14	Ziaur Rahman	male	28	Driver	Putha, word-4		
15	Shahadat Hossain	male	42	farmer	Shailowsona word-3		
16	Md. Roshid miach	male	77	farmer	Shailowsona word-3		
17	Md. Kamal miach	male	48	farmer	Sail, word-1		
18	Sumon Dhar	Male	30	Business	Sail word-1		
19	Taher miach	Male	39	Driver	Shailowsona word-3		
20	Sayed miach	male	50	farmer	Shailowsona word-3		

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project

Local Government Engineering Department (LGED)

Public Consultation with Stakeholders

Name of Community Road: Madna Road to Lakhai RHD Road via Bamkhandi

Date: 27/03/2026

Road ID: 636445023

Place of Consultation: 102 No. Bamkhandi C/Ps

Village: 102 No. Bamkhandi Ward No.: 05

Union: Lukra

Upazila: Habiganj Sadar

District: Habiganj

Public Consultation Participants List

Sl. No.	Name	Male/ Female	Age	Occupation	Village/Address	Mobile No.	Signature
01	Akram Ali	Male	70	Business	Lukra/Bamkhandi		[Signature]
02	Mohamed Nur-miah	Male	75	Ret. Govt. Service	Lukra/Bamkhandi		[Signature]
03	Aminul Islam	Male	59	Head Teacher	Lukra/Bamkhandi		[Signature]
04	Md. Josh miah	Male	85	farmer	Lukra/Bamkhandi		[Signature]
05	Rafiq miah	Male	67	farmer	Lukra/Bamkhandi		[Signature]
06	Md. Azizul Islam	Male	86	Teacher	Lukra/Bamkhandi		[Signature]
07	Fazid miah	Male	59	farmer	Lukra/Bamkhandi		[Signature]
08	Chuzak miah	Male	70	farmer	Lukra/Bamkhandi		[Signature]
09	Wahid miah	Male	60	farmer	Lukra/Bamkhandi		[Signature]
10	Babul miah	Male	55	farmer	Lukra/Bamkhandi		[Signature]
11	Abdul Aowal	Male	45	farmer	Lukra/Bamkhandi		[Signature]
12	Md. Boccu miah	Male	52	farmer	Lukra/Bamkhandi		[Signature]
13	Md. Kabin miah	Male	55	farmer	Lukra/Bamkhandi		[Signature]
14	Shahel miah	Male	53	farmer	Lukra/Bamkhandi		[Signature]
15	Goesh miah	Male	40	farmer	Lukra/Bamkhandi		[Signature]
16	Edu miah	Male	50	farmer	Lukra/Bamkhandi		[Signature]
17	Kawsher Rahman	Male	47	Business	Lukra/Bamkhandi		[Signature]