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Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Improvement of Community Infrastructure, Growth Center, others roads & Connecting Roads & Landing Stage at Kurigram District



Environmental & Social Assessment and Management Report of Community Roads

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Table of Contents

ABBREVIATIONS	iv
Executive Summary	v
1. INTRODUCTION	1
1.1 Sub-Project Background.....	1
1.2 Objective of the Sub-Project.....	2
1.3 Scope of the Project	2
1.4 Objectives of the Report.....	3
2.0 SUB-PROJECT LOCATION AND DESCRIPTION	3
2.1 Sub-Project Location	3
2.2 Physical Features and Environment	7
2.3 Socio-Economic Context	7
2.4 Sub-Project Description	7
2.5 Elementary information of Community Road in Kurigram District	2
2.6 Environmental / Social Category of the Subproject	8
2.7 Baseline Conditions of the Community Road	8
3.0 Environmental and Social Survey and Screening	16
3.1 Survey and Screening Methodology.....	16
3.2 Important features/establishments around the PIA	16
4.0 Environmental and Social Impacts and Proposed Mitigation and Enhancement Measures.	31
4.1 Environmental and Social Impacts for the Implementation of Work	31
5.0 Environmental and Social Management Plan (ESMP)	46
5.1 Purpose of the ESMP	46
5.2 Environmental and Social Management Plan (ESMP)	46
5.3 Monitoring of ES Performance.....	65
5.4 Capacity Development Measures	68
5.5 Tree Plantation Plan	70
5.6 Cost of Environmental and Social Enhancement Works in BOQ	72
6.0 PUBLIC CONSULTATION MEETING	73
6.1 Stakeholder Engagement.....	73
6.2 Methodology	74

6.3 Issues and Recommendations raised by the Participants in regard to component interventions	77
7.0 CONCLUSIONS AND RECOMMENDATIONS	94

List of Annexure

ANNEXURE 1: ROAD WISE ENVIRONMENTAL AND SOCIAL FINDINGS UNDER KURIGRAM DISTRICT (GCCR-15)	96
ANNEXURE 2: ATTENDANCE OF CONSULTATION MEETING	663

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 Kurigram District has been prepared for the sub-project titled “Improvement of Community Infrastructure Connecting Roads at Kurigram 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, 19 (nineteen) community infrastructures connecting roads in Kurigram District will be improved to provide safe and sustainable access to nearby flood shelters and essential social infrastructure. The roads are located in seven upazilas— Raumarī (2 roads with total length of 3.6 km), Rajarhat (5 roads with total length of 6.436 km), Bhurungamari (2 roads with total length of 4.237 km), Ulipur (2 roads with total length of 2.63 km), Kurigram Sadar (4 roads with total length of 4.465 km), Nageshwari (2 roads with total length of 4.24 km) and Phulbari (2 roads with total length of 4.34 km)—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.

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

- (i) For the road from **(0501) Jadur char Natungram ghat Road to Dhanarchar FCD (149794115)**, bituminous carpeting will be carried out along the entire stretch from **chainage 0+000 to 1+000**, where the existing pavement is damaged and broken. This road passes through homestead areas, agricultural land, at least 6 ponds on both sides, a Government Primary School, mosques and graveyards. Along with the general road

- improvement works, Road safety measures, including signage and speed breakers, will be installed near the Mosjid.
- (ii) **Chaktabari- Thanthonia para via Koraikandi (149795006)**, passes through agricultural lands, houses, graveyards, Eidgah and 4 ponds, 2 ditches and a canal is also located along the road. Along with the proposed bituminous carpeting from **chainage 0+000 to 2+600**, road signage will be installed near sensitive locations, including the Madrasa at **Ch. 0+260, Ch. 1+250 and 1+340**,
 - (iii) Bituminous carpeting will be implemented from **chainage 0+000 to 1+300** on the road, which stretches from **Amertal - Sukdev Road (149774050)** through a solar lamp post, stretches of trees, agricultural lands, and households, at least two bamboo bushes, number of electric poles, a rice mill, and so on.
 - (iv) For the road from **Tograi hat - Rajarhat UP (Shahed Bazar) via Taltola Mondolpara (149774025)** bituminous carpeting will be implemented along the entire stretch from **chainage 0+000 to 1+140**, and the road passes through different establishment and physical features on both sides, such as a sub-station, kindergarten school, stretches of houses, graveyards, stretches of agricultural lands, mosques, pond, ditches.
 - (v) The proposed works for the road section from **Taltola Pucca road -Dinor bazar via Kalirpat (149775048)** include the provision of bituminous carpeting over the **chainage from 0+000 to 1+300**. The road passes through different socio-environmental features and establishments, such as stretches of human settlements and agricultural lands.
 - (vi) For the road from **Basrah Madrasha - Jarijar Tutapaikar Bazar Road (149774059)**, bituminous carpeting will be carried out from **chainage 0+000 to 2+110**. The road passes through different socio-environmental features and establishments, such as stretches of households, agricultural lands, ponds.
 - (vii) For the road from **Sonatali Pukurpar to Vot hat Bazar via Sore Beparir Ghat. (149064050)**, bituminous carpeting will be undertaken from **chainage 0+000 to 2+737**. The road passes through different socio-environmental features and establishments, such as stretches of trees, Agricultural land, homestead etc.
 - (viii) For the road from **Bangosona Hat - Shahi Bazar (149064041)**, bituminous carpeting will be implemented from **chainage 0+000 to 1+500**. The road passes through different socio-environmental features and establishments, such as stretches of trees, Shahib bazar GPS etc.
 - (ix) For the road from **Dhamsreni UP office-Anantapur hat (149943011)**, bituminous carpeting will be undertaken from **chainage 0+000 to 1+060**. The road passes through different socio-environmental features and establishments, such as stretches of trees, shops, Agricultural land, homestead and Bagua Anantapur high school etc. Traffic signage will be provided at ch.1050m.
 - (x) For the road from **Ulipur bazar Rd.-Bozra hat (149944034)**, bituminous carpeting will be undertaken from **chainage 0+000 to 1+570**. The road passes through different socio-environmental features and establishments, such as stretches of trees, shops, Agricultural land, homestead and hat-bazar etc. Traffic signage will be provided at ch.-200, Ch.700.

- (xi) For the road from **Holokhana Sarkararpara Eidgha Field to Hemarkuti WAPDA Embankment (149525088)**, bituminous carpeting will be undertaken from **chainage 0+000 to 1+710**. The road passes through different socio-environmental features and establishments, such as stretches of trees, shops, Agricultural land, homestead, pond, primary school etc. Traffic signage will be provided at ch.-500.
- (xii) For the road from **Bancharam-BWDB Embankment (149525012)**, bituminous carpeting will be undertaken from **chainage 0+000 to 1+095**. The road passes through different socio-environmental features and establishments, such as stretches of trees, shops, Agricultural land, homestead, pond, primary school etc. Traffic signage will be provided at ch.-070, ch.-80, ch.-200m, ch.-350m, ch.-750m.
- (xiii) For the road from **Neferdarga H/O Aranda Kamar (149525001)**, bituminous carpeting will be undertaken from **chainage 0+000 to 1+800**. The road passes through different socio-environmental features and establishments, such as stretches of trees, Agricultural land, homestead.
- (xiv) For the road from **Boribari Mouzar Asmoth Alir Near pocca Road to Modhokhamar Holkhana GPS (149525200)**, bituminous carpeting will be undertaken from **chainage 0+000 to 0+860**. The road passes through different socio-environmental features and establishments, such as stretches of trees, Agricultural land, homestead, madrasha and pond. Traffic sign will be provided at ch.180m.
- (xv) For the road from **Khamar para RHD road Bot tola to Bamandanga UP office (149615078)**, bituminous carpeting will be undertaken from **chainage 0+000 to 2+090**. The road passes through different socio-environmental features and establishments, such as stretches of trees, Agricultural land, homestead, Madrasha. Traffic sign will be given at ch.-200m, ch.260m.
- (xvi) For the road from **Bottola Chowmohona bazer to Raygonj UP office (149613016)**, bituminous carpeting will be undertaken from **chainage 0+000 to 2+150**. The road passes through different socio-environmental features and establishments, such as stretches of trees, Agricultural land, homestead, Madrasha, Shops, school. Traffic sign will be provided at ch.100m, ch.-280m, ch.-1080m.
- (xvii) For the road from **Borovita Bazar to Pachim Dhaniram GPS (149184074)**, bituminous carpeting will be undertaken from **chainage 0+000 to 1+390**. The road passes through different socio-environmental features and establishments, such as stretches of trees, Agricultural land, homestead, Madrasha, Shops, school. Traffic sign will be provided at ch.50m, ch.-280m, ch.-1380m.
- (xviii) For the road from **Borovita UP at Omer tapoti - Amsa Bazar - Borolay Bazar via Bulbul Khandakar house (Shahajahan Sochib house) (149184094)**, bituminous carpeting will be undertaken from **chainage 0+000 to 2+955**. The road passes through different socio-environmental features and establishments, such as stretches of trees, Agricultural land, homestead, Shops, school. Traffic sign will be provided at ch.80m.
- (xix) For the road from **Harisher taluk-Sindurmati Road (149775028)**, bituminous carpeting will be undertaken from **chainage 0+000 to 0+586**. The road passes through different socio-environmental features and establishments, such as stretches of trees,

Agricultural land, homestead, hat-bazar, Beel and ditches. Traffic sign will be provided at ch.100m.

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

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

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

compensatory plantation programs have been suggested to be undertaken to restore local vegetation and maintain ecological balance. However, the survey found there is no need to remove any trees because the community road will be developed / improved using the existing Right of Way (RoW).

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

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

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

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

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

1. 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 through community road infrastructures 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 seven upazilas of Kurigram District, namely Roumari Upazila, Rajarhat Upazila, Bhurungamari Upazila, Kurigram Sadar Upazila, Ulipur Upazila, Phulbari Upazila; and Nageshwari 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 floodwater. 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 livelihood and social 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 lead steer 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 Kurigram 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 Kurigram 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 residents are protected and enhanced.

1.3 Scope of the Project

The scope of the project includes the construction of multipurpose flood shelters and construction of related access roads, flood embankments, drainage channels (both natural and manmade). The proposed infrastructure should 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 properties are also 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 Kurigram District under the RIVER Project and to propose appropriate mitigation measures and management actions. 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 Kurigram District under the RIVER Project.

2.1 Sub-Project Location

The sub-project covers selected community roads located in Kurigram District, which is considered by its fertile alluvial plains and riverine chars, which are emergent islands formed through sediment deposition in the braided river systems. The topography of features of this district predominantly flat alluvial plains of the Teesta, Brahmaputra basin 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. Kurigram is often called the “Land of Rivers” due to the plenty of waterways that defined its geographical characteristics. The sub-project specifically targets seven upazilas, are:

- 1. Rowmari Upazila** – Rowmari upazila is characterized by its proximity to the Brahmaputra River and the presence of water bodies such as the Jhingiram and Halhali rivers. The climate in Rowmari is influenced by its geographical location, and rainfall throughout the year, however, floods and river erosion is a common phenomenon in this upazila, particularly floods cause due to upstream water from Assam, India inundates quite numbers of villages, agricultural fields and homesteads make the population homeless. The upazila has a population of 227,513 as of 2022 census (Population Census, BBS). The literacy rate was 60.52 percent, with 62.85 percent for males and 58.30 percent for females. The sex ratio is 95.98 males for every 100 females. About 85.05 percent of population live in rural areas.
- 2. Rajarhat Upazila** – Rajarhat upazila is surrounded by two rivers, Teesta and Dharla. The climate in Rajarhatis is characterized by a tropical climate with south-west monsoon

occurring in monsoon season and a dry period in winter season. Rajarhat has been significantly affected by climate change, with the northeastern flash flood in 2022 impacting over 7.2 million people. The upazila is also prone to natural hazards such as cyclones, floods, landslides, thunderstorms and earthquakes. The government and development partners have been working on strengthening institutional capacity to address climate vulnerability and improve risk management. LGED has been working on constructing Flood Shelters and improvement of community roads for emergency accessibility. Rajarhat upazila demography reveal a population of 203,060 as of 2022 census (Population Census, BBS, 2022). The literacy rate shows 70.27 percent with 74.43 percent for males and 66.33 percent for females. The sex ratio is 95.83 males for every 100 females. Village areas account for 91.56 percent of the population.

3. **Bhurungamari Upazila** – Bhurungamari upazila is characterized by its flat, alluvial terrain and is part of the Brahmaputra flood plain. The presence of rivers in this upazila such as the Brahmaputra, Teesta, Dharla and Dudhkumar, which play a significant role in ecology and livelihoods. The rivers also pose crucial risks due to seasonal flooding, riverbank erosion, and climate vulnerability. The ongoing climate change crisis is exacerbating and causes displacement of communities. 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.
4. **Ulipur Upazila** – Ulipur upazila of Kurigram district is within the floodplain of major rivers such as the Brahmaputra, Dharla and Teesta. The climate is characterized by fertile alluvial soil, riverine landscapes and seasonal raining, estimated 45.52 percent rainy days in a year. The region is vulnerable to natural disasters like flooding and riverbank erosion, which significantly affect agriculture, housing and livelihoods. Ulipur upazila has population of 440,152 distributed across 120,793 households as of 2022 census (Population Census, BBS). The literacy rate is 64.70 percent with 68.20 percent for males and 61.39 percent for females. The sex ratio was 95.76 males for every 100 females, and 85.11 percent of population is living in rural areas.
5. **Kurigram Sadar Upazila** – As the district headquarters, this upazila has a mix of semi-urban and rural areas. Sadar Upazila includes the alluvial plain of the Teesta-Brahmaputra basin, with the Dharala river being a significant geographical feature. Sadar Upazila of Kurigram had 90,115 households and a population of 361,408. Literacy rate (Age 7 years and above) was found 69.87%: 72.85% for males and 67.00% for females, and a sex ratio of 97.29 males against 100 females. 63.50 percent of the population lived in the rural areas. In the 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.
6. **Nageshwari Upazila** – Nageshwari Upazila had 112,330 households and a population of 444,699. Nageshwari had a literacy rate (age 7 and over) of 62.75%: 65.92% for males and 59.67% for females, and a sex ratio of 98.84 males for 100 females. In Nageshwari Upazila

74.09 percent of the population was found living in rural areas. It is 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.

7. **Phulbari Upazila** – Phulbari upazila is influenced by the Indian monsoon and the region experiences a variety of weather patterns, including the onset of monsoon season, which brings heavy rainfall and contributes to the agricultural productivity. The upazila is characterized by its proximity to the Dharla River which causes seasonal flooding, inundated vast agricultural areas and peoples' homesteads. Phulbari has a population of 186,682 as of 2022 census (Population Census, BBS, 2022). The literacy rate stands at 66.01 percent, with males at 70.29 percent and females at 61.93 percent while sex ratio is 96.63 males for every 100 females. Maximum population about 88.09 percent is living in the rural areas with dispersed settlements, agricultural lands, and small marketplaces. The community roads in this upazila provide critical access to flood shelters and facilitate movement within flood-prone villages. A predominantly rural area with dispersed settlements, agricultural lands, and small marketplaces. The community roads in this upazila provide critical access to flood shelters and facilitate movement within flood-prone villages.

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 Kurigram District is attached in **Figure 2.1**.

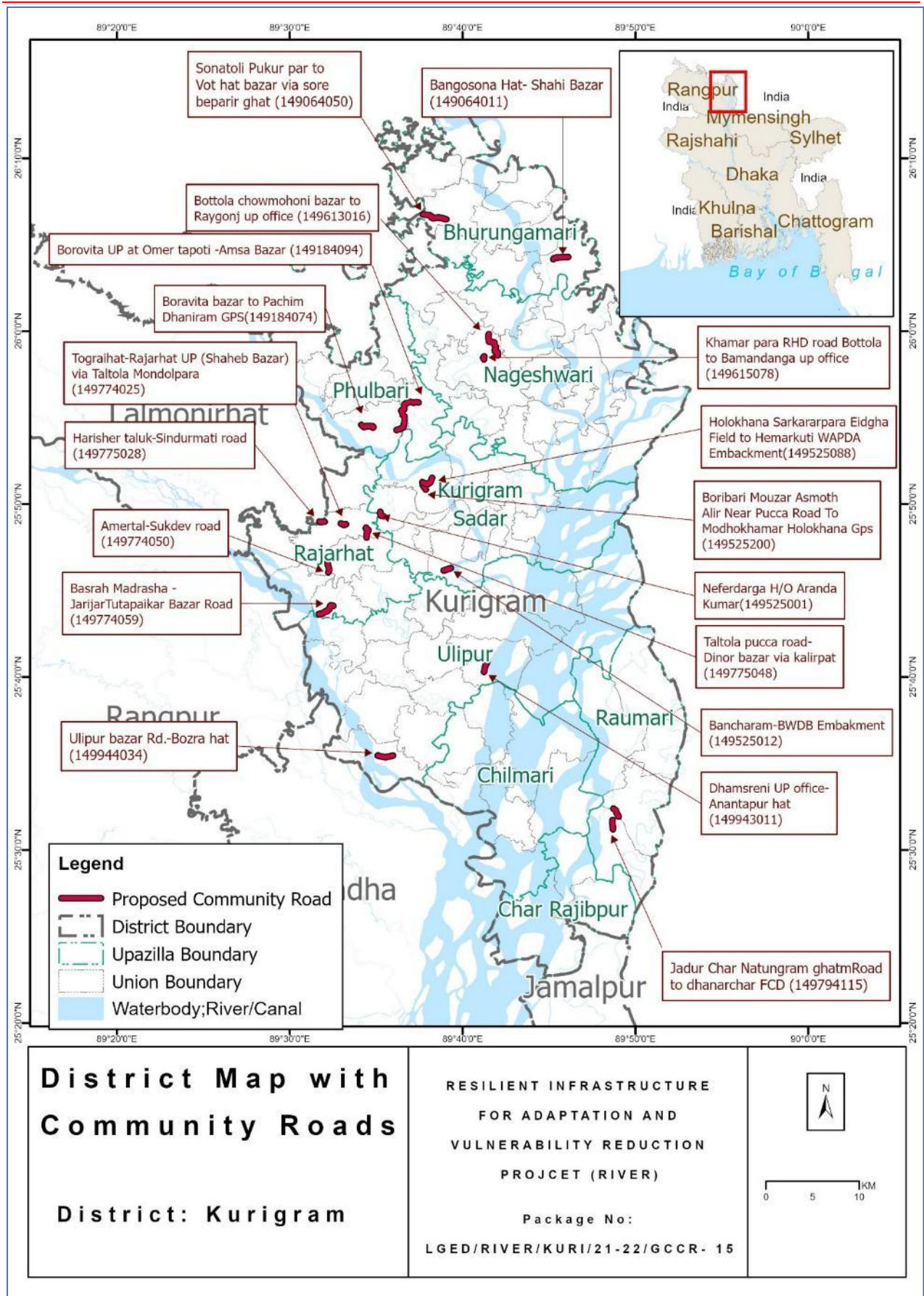


Figure 2.1: Map illustrating Community Roads of Kurigram District

2.2 Physical Features and Environment

The terrain across the project area is predominantly flat and low-lying, with several 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, small marketplaces and roadside shops
- 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 work include:

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

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

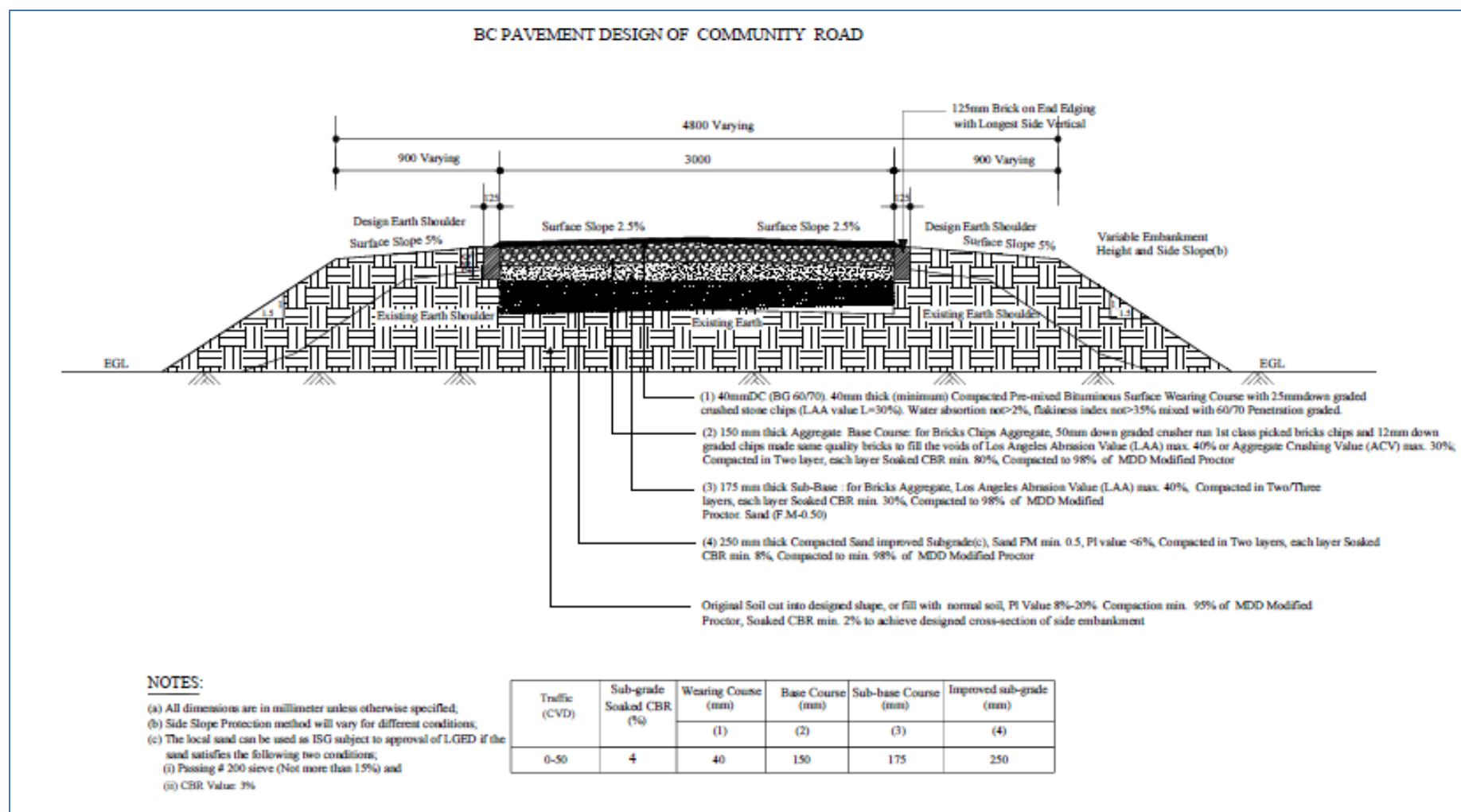


Figure 2.2: Typical Pavement Design of Community Roads

2.5 Elementary information of Community Road in Kurigram District

The community road package components in Kurigram District, located in the northern region of Rangpur 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 Rowmari Upazila, Rajarhat Upazila, Bhurungamari Upazila, Ulipur Upazila, Nageshwari Upazila, Phulbari Upazila, and Kurigram Sadar Upazila. Each road component has been identified with specific GPS coordinates to define its alignment and location within the respective union such as Judur Char, Rowmari, Chakirposhar, Nasimkhey, Rajarhat, Biddenanda, Boldia, Bhurungamari Sadar, Hatia, Bazra, Holokhana, Mogalbasha, Kathal Bari, Bamondanga, Rayganj, Barobhita, 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.	Rowmari	05 No JudurChar	0501) Jadur char Natungram ghat Road to Dhanarchar FCD (149794115)	<u>Starting Point</u> 25.530 N 89.814 E <u>Ending Point</u> 25.533 N 89.812 E	1.000	Jadur Notun Gram, Jadur Cahr, Rowmari	KUR-044, Jadur char Natun gram GPS and KUR-063 Chaktabari GPS	150m & 2 Km
2.	Rowmari	Rowmari	Chaktabari- Thanthonia para via Koraikandi (149795006)	<u>Starting Point</u> 25.540 N 89.812 E <u>Ending Point</u>	2.600	Kodaikandi, Daskhinpara, Rowmari	KUR-63, Chaktabari GPS	150m

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
				25.533 N 89.812 E				
3.	Rajarhat	Chakirposhar	Amertal - Sukdev Road. (149774050)	Starting Point 25.777383 N 89.536645 E Ending Point 25.760522 N 89.536645 E	1.300	Boddidar Chara, Daspara, Sukdeb, Chakirposhar	KUR-029 Sukhdeb GPS, KUR-038 Chandamari GPS	2.00 Km, 1.5 Km
4.	Rajarhat	Rajarhat	Tograihat - Rajarhat UP (Shahed Bazar) via Taltola Mondolpara. (149774025)	Starting Point 25.813958 N 89.555281 E Ending Point 25.815385 N 89.546336 E	1.140	Shahed Bazar, Mondolpara.	KUR-40, Hariswartaluk GPS	2.5 km
5.	Rajarhat	Chakirposhar	Taltola Pucca road - Dinor bazar via Kalirpat (149775048)	Starting Point 25.801082 N 89.574032 E Ending Point 25.810740 N 89.573558 E	1.300	Chatmadhai, Dudkhaoya, Bajemujrai	KUR-40, Hariswartaluk GPS	3.0 km
6.	Rajarhat	Nasimkhey	Basrah Madrasha - Jarijar Tutapaikar Bazer Road (149774059)	Starting Point 25.73537342 N 89.54206612 E Ending Point 25.72246108 N 89.52806331 E	2.110	Baroshudai Baza, Nasimkhey	KUR-34, Bachhra GPS	2.0 km

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report of Community Roads for Kurigram District GCCR-15)

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
7	Bhurungamari	Bhurungamari Sadar	Sonatali Pukurpar to Vot hat Bazar via Sore Beparir Ghat. (149064050)	Starting Point 26.10802724 N 89.65080437 E Ending Point 26.11266525 N 89.62840153 E	2.737	Sonatali, Purbo Bothat, Bhurungamari Sadar	KUR-003 Sonatali GPS & KUR-005 Khamarpatra Nabish GPS	300.00m & 50.00m
8	Bhurungamari	Boldia	Bangosona Hat - Shahi Bazer (149064041)	Starting Point 26.07155581 N 89.76796104 E Ending Point 26.06935332 N 89.75407145 E	1.500	Shahi Bazar, Boldia, Bhurungamari	KUR-006, Parsuramerkuti	2800m
9	Ulipur	Hatia	Dhamsreni UP office-Anantapur hat (149943011)	Starting Point 25.672068 N 89.687173 E Ending Point 25.681178 N 89.689618 E	1.060	Anantapur hat, Hatia, Ulipur.	KUR-54, Natun Anantapur Girls' GPS	500m
10.	Ulipur	Bazra	Ulipur bazar Rd.-Bozra hat (149944034)	Starting Point 25.59107 N 89.599669 E Ending Point 25.590962 N 89.584786 E	1.570	Moddha Bojra, Kalponi Bazar, Ulipur	KUR-052 Bazra gps & KUR-053 Kalapani gps	500m & 500m
11.	Kurigram Sadar	Holokhana	Holokhana Sarkararpara Eidgha	Starting Point 25.85459 N	1.710	Verberi, hemerkuthi, holokhana.	KUR-015 Up Office GPS &	2 Km & 1.5 Km

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report of Community Roads for Kurigram District GCCR-15)

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
			Field to Hemarkuti WAPDA Embankment (149525088)	<i>89.62782 E</i> <u>Ending Point</u> <i>25.85976 N</i> <i>89.63703 E</i>			KUR-057 Shuverkuti GPS	
12.	Kurigram Sadar	Mogalbasha	Bancharam-BWDB Embankment (149525012)	<u>Starting Point</u> <i>25.76953 N</i> <i>98.64840 E</i> <u>Ending Point</u> <i>25.77177 N</i> <i>89.65538 E</i>	1.095	Nidhi, Bancharam, Mogalbasha, Kurigram Sadar.	KUR-018 Malbhanga GPS & KUR-017 Kektirpar GPS	1.5 Km & 2.5 Km
13.	Kurigram Sadar	Kathal Bari	Neferdarga H/O Aranda Kamar (149525001)	<u>Starting Point</u> <i>25.82603 N</i> <i>89.58726 E</i> <u>Ending Point</u> <i>25.82163 N</i> <i>89.59047 E</i>	0.800	Protab, 05 no ward, Kathalbari, Kurigram Sadar.	KUR-015 Up Office GPS & KUR-057 Shuverkuti GPS	4 Km & 4.5Km
14.	Kurigram Sadar	Holokhana	Boribari Mouzar Asmoth Alir Near pocca Road To Modhokhamar Holkhana GPS (149525200)	<u>Starting Point</u> <i>25.84730 N</i> <i>89.63122 E</i> <u>Ending Point</u> <i>25.85355 N</i> <i>89.62767 E</i>	0.860	Boraibari, bherberi, holokhana, Kurigram Sadra.	KUR-015 Up Office GPS & KUR-057 Shuverkuti GPS	1.0 Km & 500 m
15	Nageshwari	Bamondanga	Khamar para RHD road Bot tola to Bamandanga UP office (149615078)	<u>Starting Point</u> <i>25.97970 N</i> <i>89.68653 E</i> <u>Ending Point</u>	2.09	Shanjuyar Vita, Kamarpara, Bamondanga.	KUR-022, Kuti Bamandanga GPS	1.8 km

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report of Community Roads for Kurigram District GCCR-15)

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
				25.97663 N 89.70042 E				
16	Nageshwari	Rayganj	Bottola Chowmohona bazer to Raygonj UP office. (149613016)	Starting Point 25.97663 N 89.70042 E Ending Point 26.00800 N 89.69440 E	2.15	Modhorhaile, Bot Tola, Rayganj, Nageshwari	KUR-022, Kuti Bamandanga GPS	2.0 km
17	Phulbari	Barobhita	Borovita Bazar to Pachim Dhaniram GPS (149184074)	Starting Point 25.0979 N 89.5811 E Ending Point 25.9098 N 89.5690 E	1.390	Borovita, Uttar Borovita, Phulbari	KUR-025 Dhaniram GPS, KUR-025 Char Dhaniram GPS	1.0 Km & 2.0 Km
18	Phulbari		Borovita UP at Omer tapoti - Amsa Bazar - Borolay Bazar via Bulbul Khandakar house (Shahajahan Sochib house) (149184094)	Starting Point 25.9235 N 89.6073 E Ending Point 25.9046 N 89.6030 E	2.955	Poschim Noudabos, Khoribari, Nottodabos, Barovita.	KUR-60, Nazarmahmud GPS	800m
19	Rajarhat	Rajarhat	Harisher taluk-Sindurmati Road. (149775028)	Starting Point 25.816370 N 89.533570 E Ending Point 25.816478 N 89.528597 E	0.586	Hariswer Taluk,Rajarhat	KUR-40, Hariswartaluk GPS	200m

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

2.6 Environmental / Social Category of the Subproject

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

2.7 Baseline Conditions of the Community Road

The baseline assessment of the community roads under the sub-project in Kurigram District provides a detailed understanding of the existing physical and social conditions, which serves as the groundwork for planning road improvements while minimizing environmental and social impacts. The targeted roads pass through the upazilas of as Rowmari Upazila, Rajarhat Upazila, Bhurungamari Upazila, Ulipur Upazila, Nageshwari Upazila, Phulbari Upazila, and Kurigram Sadar Upazila.

Existing Pavement Condition and Chainage: Most of the existing roads are paved or semi-paved and some are earthen 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 mostly beside the Right of Way of the road 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 operation and maintenance. Signage, speed control measures, and pedestrian pathways will be provided to enhance safety.

Overall, 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 Kurigram 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 and Proposed Interventions

Sl. No.	Road Name	Road ID	Total Road Length (km)	Pavement Condition with Chainage	Existing Structures on the road	Proposed Road Interventions	Safeguard Features
1.	(0501) Jadur char Natungram ghat Road to Dhanarchar FCD (Village-A)	149794115	1.000	Paved- 0+00 to 1+000	Culvert- (Ch. 0+40m)	BC- 1+000 Average width 3.0 m Palisading, ch.338-387m	Not available in site
2	Chaktabari-Thanthonia para via Koraikandi (Village-B)	149795006	2.600	Paved- 0+000 to 2+600	Culvert- (Ch. 1+190m) Culvert- (Ch. 2+275m) Culvert- (Ch. 2+290m)	BC- 2+600 average width-3.00m Palisading, ch. 1028m,1790m,2014m, 2060m, 2216m Culvert, 5*2 sqm, ch-1190, 5*2 sqm, ch.-2175m	Not available in site
3.	Amertal-Sukdev Road. (Village-A)	149774050	1.300	Paved- 0+000 - 2+300	Pipe Culvert- (Ch. 600m), Box Culverts (Ch. 890m, U-Drain (Ch. 961m), and U Drain Ch. 1198m) RCC Cross the drain. (Ch. 622) Palisading (Ch. 120-145 RS) Palisading (Ch. 152-165 RS) Palisading (Ch. 865-890 RS)	BC-0+00 to 1+300_ average width-3.00m Cross-drain .9*.9 ,ch.-622m Palisading, ch.-120m, 165m,278m,865m	Not available in site

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report of Community Roads for Kurigram District GCCR-15)

Sl. No.	Road Name	Road ID	Total Road Length (km)	Pavement Condition with Chainage	Existing Structures on the road	Proposed Road Interventions	Safeguard Features
4.	Tograi hat - Rajarhat UP (Shahed Bazar) via Taltola Mondolpara. (Village-A)	149774025	1.140	Paved- 0+00 to 1+140	Palisading -(Ch. 669m), Culvert U drain (Ch. 4+597)	BC- 0+00 to 1+140 average width-3.00m Palisading ch.-4132m, 4350m, 4360m, 5075m Culvert ch.-0.6*0.6 at ch. 4597m	Not available in site
5.	Taltola Pucca road - Dinor via Kalirpat (Village-B)	149775048	1.300	Paved- 0+00 to 1+140	Pipe culvert (Ch. 190m), Culvert (Ch. 428m), Bridge (Ch. 682m), U Drain (Ch. 1+080m) Palisading (Ch. 935 to 967)	BC- 0+00 to 1+300 U-drain-0.9*0.9, ch.164 Palisading-ch.-880m	Not available in site
6.	Basrah Madrasha - Jarijar Tutapaikar Bazer Road (Village-A)	149774059	2.110	Paved- 0+000 - 2+110	U Drain (Ch. 0+300m) RCC Girder Bridge (Ch. 1+300) U Drain (Ch. 1+800)	BC-0+00 to 2+110 Palisading-ch.155m, 423m, 1587m	Not available in site
7	Sonatali Pukurpar to Vothat Bazar via Sore Beparir Ghat. (Village-A)	149064050	2.737	Paved- 0+00 to 2+670	Pipe Culvert- Ch. 0+060m. U Drain- Ch. 0+746 Bridge-Ch. 1+136 U Drain- Ch. 1+620 U Drain- Ch. 1+665 U Drain- Ch. 1+760 U Drain- Ch. 2+587	BC-0+000 to 2+737 Palisading-(Ch. 11-31m) Box Culvert- (Ch. 60 m) Box Culvert- (Ch. 150 m)	Not available in site

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report of Community Roads for Kurigram District GCCR-15)

Sl. No.	Road Name	Road ID	Total Road Length (km)	Pavement Condition with Chainage	Existing Structures on the road	Proposed Road Interventions	Safeguard Features
						Slope Protection- (Ch. 95 to 542m) Palisading-(Ch. 560 to 574m) RCC Palisading-(Ch. 1428 to 1451m) Box Culvert- (Ch. 2010m) RCC Palisading-(Ch. 2188 to 2211m) Palisading-(Ch. 2+291 to 2+325m) Palisading- (Ch. 2269 to 2291m) Palisading- (Ch. 2298 to 2325m)	
8	Bangosona Hat - Shahi Bazer (Village-A)	149064041	1.500	Paved- 0+00 to 1+500	Culvert (332.00) Palisading (Ch. 0+730 to 0+780)	BC-0+00 to 1+500	Not available in site
9	Dhamsreni UP office, Anantapur hat (Union Road)	149943011	1.060	Paved- 0+00 to 1+060	U-Drain- Ch. 0+300 to 302. U-Drain- Ch. 0+950. Palisading- Ch. 0+900 to 970	BC- 0+000 to 1+060m	Not available in site
10	Ulipur bazar Rd.-Bozra hat (Village-A)	149944034	1.570	Paved- 0+000 - 1+840	U-Drain- Ch.0+636 Box Culvert- Ch. 726 to 734 Box Culvert- Ch. 991 to 1001	BC- 0+000 to 1+570m	Not available in site

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report of Community Roads for Kurigram District GCCR-15)

Sl. No.	Road Name	Road ID	Total Road Length (km)	Pavement Condition with Chainage	Existing Structures on the road	Proposed Road Interventions	Safeguard Features
					Box Culvert- Ch. 1530 to 1533		
11	Holokhana Sarkararpara Eidgha Field to Hemarkuti WAPDA Embankment (Village-B)	149525088	1.710	Paved- 1+100 to 1+700	Palisading- Ch. 0+00 to 0+054. Palisading- Ch. 0+00 to 0+054m. Palisading- Ch. 0+200 to 0+245. Palisading- Ch. 0+225 to 0+251. Palisading- Ch. 0+318 to 0+445. Culvert- Ch. 0+730m	BC- 0+000 to 1+710m Palisading ch- 00m,200m,225m, 318m, 745m Culvert- 7*3 sqm, Ch-1175m	Not available in site
12	Bancharam-BWDB Embakmen (Village-B)	149525012	1.095	Paved- 0+000 to 1+020	Palisading- Ch. 0+130 to 0+184. Culvert- Ch. 0+150m. Culvert- Ch. 0+395m. Culvert- Ch. 0+508m. Palisading- Ch. 0+596 to 0+614m.	BC- 0+000 to 1+095m Palisading ch-130m, 596m Culvert ch 395m, 508m	Not available in site
13	Neferdarga H/O Aranda Kamar (Village-B)	149525001	0.800	Paved- 0+00 to 0+800	Palisading- Ch. 0+541 to 0+564. Palisading- Ch. 0+650 to 0+690m. Palisading- Ch. 0+756 to 0+781m.	BC- 0+000 to 0+800m Palisading ch.-541m, 650m, 756m, 796m	Not available in site

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report of Community Roads for Kurigram District GCCR-15)

Sl. No.	Road Name	Road ID	Total Road Length (km)	Pavement Condition with Chainage	Existing Structures on the road	Proposed Road Interventions	Safeguard Features
					Palisading- Ch. 0+796 to 0+813m.		
14	Boribari Mouzar Asmoth Alir Near Pucca Road to Modhokhamar Holkhana GPS (Village-B)	149525200	0.860	Paved- 0+000 to 1+000	Culvert- Ch. 0+000 to 0+367. Palisading- Ch. 0+453 to 0+518m. Palisading- Ch. 0+563 to 0+612m. Palisading- Ch. 0+577 to 0+652m.	BC- 0+000 to 0+860m Culvert ch-367, 6.5*3.70 sqm Palisading ch-453m, 503m, 577m	Not available in site
15	Khamar para RHD road, Bot tola to Bamandanga UP office (Village-B)	149615078	2.09	Paved- 0+00 to 2+100	U Drain- Ch. 0+004m. U Drain- Ch. 0+087m. Bridge- Ch. 0+718m. Culvert- Ch. 1+208m.	BC- 0+000 to 2+090 m Udrain new, Ch87m, 391m,1342m, 1667m	Not available in site
16	Bot tola Chowmohona bazer to Raygonj UP office. (Union Road)	149613016	2.15	Paved- 0+00 to 2+142	U Drain- Ch. 0+122m. U Drain- Ch. 0+790m. Bridge- Ch. 1+067m. Culvert- Ch. 1+339 to 1+361m.	BC- 0+000 to 2+150 U-drain New, Ch.- 122m, 528m,660m,1010m Culvert new, ch.- 1067m Palisading new, ch.- 968m, 949m, 1234m, 1339m, 1512m, 1753m	Not available in site
17	Borovita Bazer to Pachim Dhaniram GS (Village-A)	149184074	1.390	Paved- 0+000 to 1+390	Culvert- Ch. 0+278m.	BC-0+00 to 1+390 U-drain, 0.6*0.6 sqm, ch.-167m,	Not available in site

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report of Community Roads for Kurigram District GCCR-15)

Sl. No.	Road Name	Road ID	Total Road Length (km)	Pavement Condition with Chainage	Existing Structures on the road	Proposed Road Interventions	Safeguard Features
					Palisading- Ch. 0+690m. U Drain- Ch. 0+720m.	Palisading, Ch.-25m, 916m	
18	Borovita UP at Omer tapoti - Amsa Bazer - Borolay Bazer via Bulbul Khandakar house (Shahajahan Sochib house) (Village-A)	149184094	2.955	Paved- 0+000 to 3+100	Culvert- Ch. 0+560m. Culvert- Ch. 0+601m. U Drain- Ch. 3+000m.	BC- 0+000 to 2+955 Palisading- Ch. 0+120 to 0+140 Palisading- Ch. 0+875 to 0+906 Palisading- Ch. 1+565 to 1+590	Not available in site
19	Harisher taluk- Sindurmati rd. (Village-B)	149775028	0.586	Paved- 0+000 - 0+600	Palisading (Ch. 10 - 80 RS) Palisading (Ch. 20 - 60 RS) Palisading (Ch. 360 - 390 RS)	BC-0+00 to 0+586 Palisading, ch.-61m, 81m, 332m,440m, 460m,483m	Not available in site

3.0 Environmental and Social Survey and Screening

3.1 Survey and Screening Methodology

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

3.2 Important features/establishments around the PIA

The project influences 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 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, and other culturally significant landmarks. These sites hold social and cultural importance for local communities and are often located within 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 Kurigram 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: Rangpur		District: Kurigram		Upazila: Roumari	
Name of the Road:		(0501) Jadur char Natungram ghat Road to Dhanarchar FCD (149794115)			
Total Road Length (Km)		1.000 km			
Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)		
00-300	L		Local Homes, Agricultural land.		
		R	Local Homes, Agricultural land, Pond		
300-600	L		Mosque, local homes, pond, agricultural land (338m)		
		R	Agricultural land, pond, local homes, and trees		
600-900	L		Local homes, agricultural land, pond		
		R	Local homes, agricultural land		
900-1000	L		Local homes and trees		
		R	Agricultural land		
Name of the Road:		Chaktabari- Thanthonia para via Koraikandi (149795006)			
Total Road Length (Km)		2.600 km			
Chainage	Orientation		Social/Economic/Cultural/Environmental Features		

	(Left/Right)		(With distance from the centerline of the road)
00-300	L		Local homes and pond
		R	Madrasah, local homes, and pond
300-600	L		Local homes and pond
		R	Local homes and pond
600-900	L		Local homes and pond
		R	Local homes and trees
900-1200	L		Agricultural land, local homes
		R	Agricultural land, local homes
1200-1500	L		Local homes, pond, trees
		R	Madrasah, local homes
1500-1800	L		Local homes, pond
		R	Madrasah, local homes, pond (1520m)
1800-2100	L		Local homes, pond, and agricultural land.
		R	Mosque, local homes, pond (2095m)
2100-2400	L		Agricultural land, local homes, pond
		R	Agricultural land, local homes, pond
2400-2600	L		Agricultural land, local homes, pond
		R	Agricultural land, local homes, pond
Division: Rangpur		District: Kurigram	Upazila: Rajarhat
Name of the Road:	Amertal - Sukdev Road. (149774050)		
Total Road Length (Km)	1.300 km		
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)	
00-300	L		Human settlement, agricultural land, and a pond.

		R	Fishpond, human settlement, agricultural land
300-600	L		Mosque, human settlement, agricultural land.
		R	Ditches, agriculture land, and human settlement.
600-900	L		Agricultural land.
		R	Human settlement, agriculture land.
900-1200	L		Fishpond, pond, agriculture land.
		R	Human settlement and pond.
1200-1300	L		Hat Bazar Shop, and human settlement.
		R	Agricultural land
Name of the Road:	Tograi hat - Rajarhat UP (Shahed Bazar) via Taltola Mondolpara. (149774025)		
Total Road Length (m)	1.140 km		
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)	
00-300	L		Chainage_ 4132-4173 (Fishpond) distance from center line 1.8 m.
		R	Agricultural land
300-600	L		Chainage_ 4360-4375 (Fishpond) distance from center line 1.85 m.
		R	Chainage_ 4350-4380 (Fishpond) distance from center line 1.90 m.
600-900	L		Agricultural land
		R	Agricultural land
900-1140	L		Chainage_ 5075-5135m (Fishpond) distance from center line 1.60 m.
		R	Agricultural land

Name of the Road:	Taltola Pucca road -Dinor via kalirpat. (149775048)		
Total Road Length (m)	1.300 km		
Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Ditches, pond, human settlement, and agriculture land.
		R	Agriculture land, human settlement, and pond.
300-600	L		Agriculture land and human settlement.
		R	Human settlement, agriculture land, and pond.
600-900	L		Human settlement and agriculture land.
		R	Human settlement and agriculture land.
900-1200	L		Pond, agriculture land, and human settlement.
		R	Human settlement, agriculture land, and pond.
1200-1300	L		Agriculture land, human settlement, and mosque.
		R	Human settlement, agriculture land, and pond.
Name of the Road:	Basrah Madrasha - Jarijar Tutapaikar Bazer Road. (149774059)		
Total Road Length (m)	2.110 km		
Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Agriculture land, human settlement, fish pond and pond.
		R	Agriculture land, pond, beel.
300-600	L		Ditches, pond, human settlement, and agriculture land
		R	Human settlement, agriculture land, and pond.
600-900	L		Agriculture land, pond, and fishpond.
		R	Human settlement, agriculture land, and pond.
900-1200	L		Agriculture land, human settlement, and pond.

		R	Pond, fishpond, and agriculture land.
1200-1500	L		Human settlement, and fishpond.
		R	Agriculture land, and fishpond.
1500-1800	L		Human settlement, and Agriculture land.
		R	Pond, human settlement and agriculture land.
1800-2100	L		Agriculture land, and human settlement
		R	Human settlement, and Agriculture land.
2100-2110	L		Agriculture land
		R	Agriculture land
Division: Rangpur		District: Kurigram	Upazila: Bhurungamari
Name of the Road:	Sonatali Pukurpar to Vothat Bazar via Sore Beparir Ghat. (149064050)		
Total Road Length (m)	2.737 km		
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)	
00-300	L		Chainage 00m_ Shop.
		R	Chainage 0.00m_ Pond, chainage 61.00m house.
300-600	L		Chainage 370m, house, chainage-425m- Sonatoli pukurpar gram samiti, chainage- 480m- house, chainage-500 m-pond, chainage-560m- pond, chainage-580m- house.
		R	Agricultural land
600-900	L		Chainage 890m, pond.
		R	Agricultural land
900-1200	L		Chainage 1050m, house.
		R	Chainage 1136m-house, chainage 1183m- pond.
1200-1500	L		Chainage 1268m- Eidgah Field, chainage 1424m pond.
		R	Chainage 1348m- Mosque.

1500-1800	L		Chainage 1670m- house, chainage 1730m- pond.
		R	Chainage 1840m- Purbo Volhat Gram Samiti, chainage 1865m- pond.
1800-2100	L		Agricultural land
		R	Chainage 1985m- KUR-005 Khamarpatra Nabish GPS (100m distance), chainage 1990m- pond, chainage 2490m- house.
2100-2400	L		Chainage 2205m- pond, chainage 2220m- mosque, chainage 2770m- pond.
		R	Chainage 2420m- house.
2400-2700	L		Human settlement, agriculture land, and pond.
		R	Agricultural land
2700-2737	L		Human settlement, agriculture land
		R	Agricultural land
Name of the Road:	Bangosona Hat - Shahi Bazer. (149064041)		
Total Road Length (m)	1.500 km		
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)	
00-300	L		Biddananda College, Hat-bazar shops, agricultural land, pond, and ditches.
		R	Agriculture land, pond, and human settlement.
300-600	L		Agriculture land, human settlement, ditches, Sukhdev community clinic, and mosque.
		R	Agriculture land, human settlement, ditches and pond.
600-900	L		Agriculture land, pond, and fishpond.
		R	Human settlement, agriculture land, and pond.
900-1200	L		Agriculture land, human settlement, and pond.
		R	Pond, fishpond, and agriculture land.

1200-1500	L		Human settlement, and fishpond.
		R	Agriculture land, and fishpond.
Division: Rangpur		District: Kurigram	Upazila: Ulipur
Name of the Road:	Dhamsreni UP office, Anantapur hat. (149943011)		
Total Road Length (m)	1.060 km		
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)	
00-300	L		Abu Taha Adnan Shop.
		R	Nazrul Islam Shop.
300-600	L		House and trees.
		R	House.
600-900	L		House.
		R	Pond.
900-1060	L		Rana Store.
		R	Bagua Anantapur High School.
Name of the Road:	Ulipur bazar Rd.-Bozra hat. (149944034)		
Total Road Length (m)	1.570 km		
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)	
00-300	L		Hat Bazar Shop.
		R	Hat Bazar Shop.
300-600	L		House and trees.
		R	House and trees.
600-900	L		Hat Bazar
		R	Hat Bazar and School.

900-1200	L		House and agriculture land.
		R	House and agriculture land.
1200-1500	L		Agriculture land.
		R	House and agriculture land.
1500-1570	L		Agriculture land.
		R	Pond.
Division: Rangpur		District: Kurigram	Upazila: Kurigram Sadar
Name of the Road:	Holokhana Sarkararpara Eidgha Field to Hemarkuti WAPDA Embankment. (149525088)		
Total Road Length (m)	1.710 km		
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)	
00-300	L		Pond, local home, agriculture land, primary school (5.00m).
		R	Agriculture land, local home, pond, Bir Nibash House. (10.00m).
300-600	L		Local Home and treess.
		R	Bir Nibash (10.00m), local home, pond and trees.
600-900	L		Agriculture land, local home, and trees.
		R	Agriculture land, fish pond, Large waterbody.
900-1200	L		Agriculture land, local home, and trees.
		R	Agriculture land, a large water body, and trees.
1200-1500	L		Local home.
		R	Agriculture land.
1500-1710	L		Local home and trees.
		R	Agriculture land.
Name of the Road:	Bancharam-BWDB Embankment. (149525012)		

Total Road Length (m)	1.095 km		
Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Primary School (70m), Madrasah and local home.
		R	Faruq Shop, local home, Agriculture land, and trees.
300-600	L		Local home, agriculture land, mosque, madrasah and trees.
		R	Local home, agriculture land, and trees.
600-900	L		Chairman para, local home, mosque, and trees.
		R	Agriculture land, local home, shop, and trees.
900-1095			Agriculture land, local home, shop, and trees.
Name of the Road:	Neferdarga H/O Aranda Kamar. (149525001)		
Total Road Length (m)	0.800 km		
Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Local home and trees.
		R	Local home and trees.
300-600	L		Local home and trees.
		R	Local home, agriculture land, trees and pond.
600-800	L		Local home, agriculture land, trees and pond
		R	Local home, pond and trees.
Name of the Road:	Boribari Mouzar Asmoth Alir Near Pucca Road to Modhokhamar Holkhana GPS. (149525200)		
Total Road Length (m)	0.860 km		

Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Agriculture land and treess.
		R	Madrasah, agriculture land, trees and pond.
300-600	L		Agriculture land, local home, trees and pond.
		R	Agriculture land, local homes, and pond.
600-860	L		Local home, pond, and trees.
		R	Agriculture land, trees, and pond.
Division: Rangpur		District: Kurigram	Upazila: Nageshwari
Name of the Road:	Khamar para RHD road, Bottola to Bamandanga UP office. (149615078)		
Total Road Length (m)	2.090 km		
Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Chainage 00m_ Shop.
		R	Chainage 0.00m_ Pond, chainage 61.00m house.
300-600	L		Chainage 370m, house, chainage-425m- Sonatoli pukurpar gram samiti, chainage- 480m- house, chainage-500 m-pond, chainage-560m- pond, chainage-580m- house.
		R	Agricultural land
600-900	L		Chainage 890m, pond.
		R	Agricultural land
900-1200	L		Chainage 1050m, house.
		R	Chainage 1136m-house, chainage 1183m- pond.
1200-1500	L		Chainage 1268m- Eidgah Field, chainage 1424m pond.
		R	Chainage 1348m- Mosque.
1500-1800	L		Chainage 1670m- house, chainage 1730m- pond.

		R	Chainage 1840m- Purbo Volhat Gram Samiti, chainage 1865m- pond.
1800-2090	L		Agriculture land, local home, shop, and trees.
		R	Chainage 1985m- KUR-005 Khamarpatra Nabish GPS (100m distance), chainage 1990m- pond.
Name of the Road:	Bottola Chowmohona bazer to Raygonj UP office. (149613016)		
Total Road Length (m)	2.150 km		
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)	
00-300	L		Chainage 00m_ Shop.
		R	Chainage 0.00m_ Pond, chainage 61.00m house.
300-600	L		Chainage 370m, house, chainage-425m- Sonatoli Pukurpar gram samiti, chainage- 480m- house, Chainage-500 m-pond, chainage-560m- pond, Chainage-580m- house.
		R	Agricultural land
600-900	L		Chainage 890m, pond.
		R	Agricultural land
900-1200	L		Chainage 1050m, house.
		R	Chainage 1136m-house, chainage 1183m- pond.
1200-1500	L		Chainage 1268m- Eidgah Field, chainage 1424m pond.
		R	Chainage 1348m- Mosque.
1500-1800	L		Chainage 1670m- house, chainage 1730m- pond.
		R	Chainage 1840m- Purbo Volhat Gram Samiti, chainage 1865m- pond.
1800-2100	L		Agricultural land
		R	Chainage 1985m- KUR-005 Khamarpatra Nabish GPS (100m distance), chainage 1990m- pond,

2100-2150	L		Agricultural land
		R	Agricultural land
Division: Rangpur		District: Kurigram	Upazila: Phulbari
Name of the Road:	Borovita Bazar to Pacshim Dhaniram GPS. (149184074)		
Total Road Length (m)	1.390 km		
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)	
00-300	L		Chainage 00m_ Shop, house, pond, agriculture land, etc.
		R	Chainage 0.00m_ Shop, house, agriculture land, pond, etc.
300-600	L		Agriculture land, house, mosque, etc.
		R	House, agriculture land, ditches etc.
600-900	L		House, agriculture land etc.
		R	Houses, ditches, agriculture land etc.
900-1200	L		House, agriculture land etc.
		R	House, agriculture land, madrasah, pond etc.
1200-1390	L		House, madrasah, agriculture land, pond etc.
		R	House, agriculture land etc.
Name of the Road:	Borovita UP at Omer tapoti - Amsa Bazar - Borolay Bazar via Bulbul Khandakar house (Shahajahan Sochib house). (149184094)		
Total Road Length (m)	2.955 km		
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)	
00-300	L		Shop, house, agriculture land, etc.
		R	Shop, pond, house, agriculture land, etc.
300-600	L		House, agriculture land, GPS, etc.
		R	Agriculture land, house, etc.

600-900	L		High school, agriculture land, and houses.
		R	House, agriculture land, etc.
900-1200	L		House, agriculture land, etc.
		R	House, agriculture land, etc.
1200-1500	L		Agriculture land, fishpond and houses etc.
		R	House, agriculture land, ditches etc.
1500-1800	L		House, agriculture land, and mosque.
		R	Agriculture land, house etc.
1800-2100	L		Village market area, houses, waterbody, agriculture land etc.
		R	Village market, agriculture land, etc.
2100-2400	L		House agriculture land, etc.
		R	House agriculture land, etc.
2400-2700	L		Agriculture land, houses etc.
		R	Agriculture land, pond, houses.
2700-2955	L		Houses, agriculture land.
		R	Agriculture land, pond, houses.
Division: Rangpur		District: Kurigram	Upazila: Rajarhat
Name of the Road:	Harisher taluk-Sindurmati Road. (149775028)		
Total Road Length (m)	0.586 km		
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)	
00-300	L		Hatbazar shops, beel, ditches, pond, fishpond, human settlement, and agriculture land.
		R	Fishpond, pond, and human settlement.
300-586	L		Fishpond, ditches, pond, and human settlement.
		R	Fishpond, pond, and human settlement.

4.0 Environmental and Social Impacts and Proposed Mitigation and Enhancement Measures

4.1 Environmental and Social Impacts for the Implementation of Work

The proposed community road improvement in Kurigram District under the RIVER Project aims 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 protection and enhancement will be an integral component of the sub-projects. Environmental and Social Mitigation and Enhancement Measures to address potential impacts of environmental and social on the communities 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 uses. Social mitigation measures will focus on minimizing disruption to local communities and their livelihoods 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 community 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 Kurigram District

Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
1	(0501) Jadur char Natungram Ghat Road to Dhanarchar FCD	- Dust generation and air pollution during earthworks, transportation of construction materials, and road surface improvement which may affect nearby settlements and the area around Nij Shekh Sundar Jame Mosque. - Noise disturbance from construction machinery and vehicles, particularly affecting nearby residents and religious activities at the mosque. - Temporary disruption of mobility of the locals and access for residents, pedestrians, and local vehicles during road rehabilitation activities. - Occupational and community safety risks due to movement of construction vehicles and operation of equipment along the road corridor.	- Regular water spraying on exposed soil and road surfaces, covering construction materials during transport, limiting vehicle speed, and maintaining machinery to control dust emissions. - Restrict construction work during sensitive hours (especially prayer times), maintain equipment to reduce noise, and avoid unnecessary honking or heavy machinery operation near the mosque area. - Maintain temporary access pathways, install warning signs and barricades, implement a basic traffic management plan, and inform local residents in advance about construction schedules. - Provide personal protective equipment (PPE) to workers, install safety signage and barricades, conduct safety briefings for workers, and ensure safe movement of construction vehicles within the work zone.
2	Chaktabari - Thanthonia Para via Koraikandi	- Dust generation and air pollution from earthworks, transportation of materials, and road surface preparation which may affect nearby settlements and roadside shops. - Noise disturbance from construction equipment and vehicles, particularly affecting	- Regular water spraying on exposed surfaces, covering construction materials during transport, maintaining vehicles and limiting speed near settlements. - Restrict high-noise activities to daytime hours, maintain machinery properly, and avoid

Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
		nearby households, schools, and local religious establishments. • Temporary disruption of local traffic and pedestrian movement during culvert repair, earthworks, and road surface improvement. • Potential drainage blockage and localized waterlogging are due to damaged culverts or improper construction practices.	construction work during prayer times or school hours where feasible. • Install temporary traffic management signs, maintain alternate access routes, and ensure safe pedestrian passage during construction. • Rehabilitate and maintain existing culverts and cross-drainage structures, ensure proper alignment of drainage channels, and keep drainage paths clear during construction.
3	Amertal-Sukdev Road	• Noise and vibration from construction equipment disturbing nearby residents, schools, and local community activities. • Temporary disruption of local traffic and pedestrian movement along the road corridor during construction activities. • Minor removal of roadside vegetation or small trees within the existing right of way. • Risk of soil erosion or embankment instability particularly during the rainy season. • Community safety risks due to movement of construction vehicles near settlements and agricultural fields. • Temporary disturbance to roadside economic activities and access to houses or agricultural land.	• Restrict construction activities to daytime hours, maintain machinery properly, and avoid excessive noise near sensitive locations. • Install warning signs and barricades, ensure temporary access for pedestrians and local vehicles, and implement a basic traffic management plan. • Minimize cutting of trees and vegetation; undertake compensatory roadside tree plantation after construction where feasible. • Maintain alternative access paths where required, schedule works in sections to minimize disruption and consult with local residents before major activities.

Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
4	Tograi hat - Rajarhat UP (Shahed Bazar) via Taltola	- Dust generation from earthworks, excavation, and movement of construction vehicles affecting nearby households and roadside shops. - Noise disturbance from operation of construction machinery near residential areas, schools, and religious establishments. - Temporary traffic congestion and disruption of local mobility during road repair and culvert improvement works. - Community safety risks due to movement of heavy vehicles and construction equipment near settlements and schools. - Temporary disturbance to local economic activities such as roadside shops and vendors.	- Regular water spraying on exposed surfaces, covering construction materials during transport, and limiting vehicle speed within settlements. - Restrict high-noise activities to daytime hours, maintain machinery properly, and avoid construction near sensitive locations during school or prayer times. - Implement traffic management measures including temporary diversions, warning signs, flagmen, and maintaining access to houses and local roads. - Install warning signs, safety barriers, and speed control measures; assign flagmen in busy locations to guide traffic and pedestrians. - Dispose excess materials at designated sites, reuse suitable materials for road embankment, and maintain proper waste management practices. - Maintain access to shops and markets during construction, conduct works in phases, and coordinate with local community representatives to minimize disruptions.
5	Taltola Pucca road -Dinor via Kalirpat	Dust generation during earthworks, road resurfacing, and material transportation, affecting nearby homes, shops, schools, and roadside settlements.	Regular sprinkling of water on roads, covering transport vehicles, limiting speed of vehicles, and maintaining construction equipment to minimize dust.

Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
		• Temporary obstruction of pedestrian and local traffic, creating difficulties for villagers, school children, and vendors. • Blockage or inadequate cross-drainage and culverts, leading to waterlogging and localized flooding along the road. • Generation of construction waste and debris, which may pollute nearby fields or drainage channels if improperly managed. • Disturbance to local livelihoods, including roadside vendors, small shops, and farmers during construction activities.	• Construct protection walls, palisading walls, and guide walls where required; use compaction and proper grading to stabilize embankments. • Maintain access to businesses, communicate construction schedules in advance, and coordinate temporary relocation or alternate access routes if required. • Ensure road maintenance after construction, integrate road safety features, and promote roadside plantation for environmental enhancement.
6	Basrah Madrasha - Jarijar Tutapaikar Bazar Road	• Temporary obstruction of local traffic and pedestrian movement during culvert replacement and embankment works. • Soil erosion and slope instability along embankment sections, especially in low-lying areas prone to flooding. • Waterlogging and drainage blockage due to construction near existing culverts and cross drains. • Waste generation from construction debris and excavated soil causing visual pollution and potential blockage. • Community health and safety risks from heavy vehicles and construction near schools, mosques, and settlements.	• Implement traffic management plan, provide warning signs, maintain alternative routes, and allow temporary pedestrian access. • Stabilize slopes with palisading or protection walls, compaction of earthworks, and turfing or roadside plantation. • Clean and rehabilitate existing drains, construct additional drainage where needed, and ensure water flow during monsoon. • Proper disposal at designated sites, reuse suitable materials for embankment, and maintain clean worksite. • Maintain buffer zones around religious or cultural sites, avoid construction activities during events, and consult local leaders before work.

Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
		Enhanced disaster resilience and evacuation access to nearby flood-prone areas and embankments.	Climate-resilient road design, improved drainage, and clear linkages with embankment and other shelters.
7	Sonatali Pukurpar to Vot hat Bazar via Sore Beparir Ghat	- Dust generation during earthworks, road resurfacing, and material transportation, affecting nearby homes, shops, schools, and roadside settlements. - Temporary obstruction of pedestrian and local traffic, creating difficulties for villagers, school children, and vendors. - Blockage or inadequate cross-drainage and culverts, leading to waterlogging and localized flooding along the road. - Generation of construction waste and debris, which may pollute nearby fields or drainage channels if improperly managed. Disturbance to local livelihoods, including roadside vendors, small shops, and farmers during construction activities.	- Regular water spraying on construction sites and road surfaces, covering trucks carrying materials, and minimizing speed of vehicles. - Stabilize embankments with compaction, turfing, palisading walls, and guide/protection walls where required. - Avoid unnecessary encroachment, fence off agricultural plots, and restore disturbed lands after construction. - Introducing speed limits, warning signs, temporary barriers, and raise awareness among local residents.
8	Bangosona Hat - Shahi Bazar	- Dust generation during earthworks, road surface improvement, and material transport affecting nearby households, schools, and shops. - Noise and vibration from machinery and vehicles disturbing residents, nearby schools, and religious establishments.	- Dust generation during earthworks, road surface improvement, and material transport affecting nearby households, schools, and shops. - Noise and vibration from machinery and vehicles disturbing residents, nearby schools, and religious establishments. - Temporary disruption of pedestrian and vehicular traffic along the road.

Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
		• Temporary disruption of pedestrian and vehicular traffic along the road. • Soil erosion and embankment are instability due to excavation, filling, or rainfall. • Removal of roadside trees or vegetation for road widening or protection works. • Construction waste and debris generation that may affect nearby settlements or drainage. Disturbance to agricultural lands adjacent to the road during earthwork and material storage.	• Soil erosion and embankment are instability due to excavation, filling, or rainfall. • Removal of roadside trees or vegetation for road widening or protection works. • Construction waste and debris generation that may affect nearby settlements or drainage. Disturbance to agricultural lands adjacent to the road during earthwork and material storage.
9	Dhamsreni UP office, Anantapur hat	• Temporary obstruction of traffic and pedestrian movement along the road. • Erosion of road shoulders and embankments during earthworks or heavy rainfall. • Waterlogging and improper drainage due to old or insufficient culverts and cross drains. • Safety risks for workers include accidents, injuries, and exposure to dust or noise. • Safety risks for local communities from heavy machinery, trucks, and construction activities. • Access disruption to schools, mosques, and markets along the road alignment.	• Implement traffic management plans; provide alternative access or temporary detours; install warning signs and barricades. • Stabilize embankments with turfing, palisading walls, guide/protection walls; proper compaction and grading of shoulders; maintain drainage. • Rehabilitate existing culverts; construct additional cross-drains where needed; ensure free flow of water during and after construction. • Avoid encroachment on crop areas; coordinate with landowners; restore disturbed farmland after construction.

Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
		- Impact on small roadside businesses or vendors due to construction activities. - Potential soil and water contamination from fuel, lubricants, and construction materials. - Improved disaster resilience and evacuation route during floods or emergencies. Enhancement of local environment and aesthetics along the road corridor.	- Install road signs, barriers, and speed control measures; conduct safety awareness sessions for residents, students, and road users. - Provide temporary access; schedule work to avoid peak market hours; inform vendors in advance. Store fuel and chemicals in safe, designated areas; prevent leakage; maintain spill containment measures; avoid disposal in drains or water bodies.
10	Ulipur bazar Rd.-Bozra hat	- Dust generation during earthworks, road resurfacing, and material transportation, affecting nearby homes, shops, schools, and roadside settlements. - Temporary obstruction of pedestrian and local traffic, creating difficulties for villagers, school children, and vendors. - Blockage or inadequate cross-drainage and culverts, leading to waterlogging and localized flooding along the road. - Generation of construction waste and debris, which may pollute nearby fields or drainage channels if improperly managed. Disturbance to local livelihoods, including roadside vendors, small shops, and farmers during construction activities.	- Dust generation during earthworks, road resurfacing, and material transportation, affecting nearby homes, shops, schools, and roadside settlements. - Temporary obstruction of pedestrian and local traffic, creating difficulties for villagers, school children, and vendors. - Blockage or inadequate cross-drainage and culverts, leading to waterlogging and localized flooding along the road. - Generation of construction waste and debris, which may pollute nearby fields or drainage channels if improperly managed. Disturbance to local livelihoods, including roadside vendors, small shops, and farmers during construction activities.

Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
11	Holokhana Sarkarpara Eidgha Field to Hemarkuti WAPDA Embankment	• Temporary obstruction of local traffic and pedestrian movement during culvert replacement and embankment works. • Soil erosion and slope instability along embankment sections, especially in low-lying areas prone to flooding. • Waterlogging and drainage blockage due to construction near existing culverts and cross drains. • Waste generation from construction debris and excavated soil causing visual pollution and potential blockage. • Community health and safety risks from heavy vehicles and construction near schools, mosques, and settlements. Enhanced disaster resilience and evacuation access to nearby flood-prone areas and embankments.	• Implement traffic management plan, provide warning signs, maintain alternative routes, and allow temporary pedestrian access. • Stabilize slopes with palisading or protection walls, compaction of earthworks, and turfing or roadside plantation. • Clean and rehabilitate existing drains, construct additional drainage where needed, and ensure water flow during monsoon. • Proper disposal at designated sites, reuse suitable materials for embankment, and maintain clean worksite. • Maintain buffer zones around religious or cultural sites, avoid construction activities during events, and consult local leaders before work. Climate-resilient road design, improved drainage, and clear linkages with embankment and other shelters.
12	Bancharam-BWDB Embankment	• Dust generation from earthworks, excavation, and movement of construction vehicles affecting nearby households and roadside shops. • Noise disturbance from operation of construction machinery near residential areas, schools, and religious establishments.	• Regular water spraying on exposed surfaces, covering construction materials during transport, and limiting vehicle speed within settlements. • Restrict high-noise activities to daytime hours, maintain machinery properly, and avoid construction near sensitive locations during school or prayer times. • Implement traffic management measures including temporary diversions, warning signs,

Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
		• Temporary traffic congestion and disruption of local mobility during road repair and culvert improvement works. • Community safety risks due to movement of heavy vehicles and construction equipment near settlements and schools. Temporary disturbance to local economic activities such as roadside shops and vendors.	flagmen, and maintaining access to houses and local roads. • Install warning signs, safety barriers, and speed control measures; assign flagmen in busy locations to guide traffic and pedestrians. • Dispose excess materials at designated sites, reuse suitable materials for road embankment, and maintain proper waste management practices. Maintain access to shops and markets during construction, conduct works in phases, and coordinate with local community representatives to minimize disruptions.
13	Neferdarga H/O Aranda Kamar	• Noise and vibration from construction equipment disturbing nearby residents, schools, and local community activities. • Temporary disruption of local traffic and pedestrian movement along the road corridor during construction activities. • Minor removal of roadside vegetation or small trees within the existing right of way. • Risk of soil erosion or embankment instability particularly during the rainy season. • Community safety risks due to movement of construction vehicles near settlements and agricultural fields.	• Restrict construction activities to daytime hours, maintain machinery properly, and avoid excessive noise near sensitive locations. • Install warning signs and barricades, ensure temporary access for pedestrians and local vehicles, and implement a basic traffic management plan. • Minimize cutting of trees and vegetation; undertake compensatory roadside tree plantation after construction where feasible. Maintain alternative access paths where required, schedule works in sections to minimize

Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
		Temporary disturbance to roadside economic activities and access to houses or agricultural land.	disruption and consult with residents before major activities.
14	Boribari Mouzar Asmoth Alir Near Pucca Road to Modhokhamar Holkhana GPS	- Dust generation and air pollution during earthworks, transportation of construction materials, and road surface improvement which may affect nearby settlements and the area around Nij Shekh Sundar Jame Mosque. - Noise disturbance from construction machinery and vehicles, particularly affecting nearby residents and religious activities at the mosque. - Temporary disruption of mobility of the locals and access for residents, pedestrians, and local vehicles during road rehabilitation activities. Occupational and community safety risks due to movement of construction vehicles and operation of equipment along the road corridor.	- Regular water spraying on exposed soil and road surfaces, covering construction materials during transport, limiting vehicle speed, and maintaining machinery to control dust emissions. - Restrict construction work during sensitive hours (especially prayer times), maintain equipment to reduce noise, and avoid unnecessary honking or heavy machinery operation near the mosque area. - Maintain temporary access pathways, install warning signs and barricades, implement a basic traffic management plan, and inform local residents in advance about construction schedules. Provide personal protective equipment (PPE) to workers, install safety signage and barricades, conduct safety briefings for workers, and ensure safe movement of construction vehicles within the work zone.
15	Khamar para RHD road, Bottola to Bamandanga UP office	- Temporary obstruction of traffic and pedestrian movement along the road. - Erosion of road shoulders and embankments during earthworks or heavy rainfall.	- Implement traffic management plans; provide alternative access or temporary detours; install warning signs and barricades. - Stabilize embankments with turfing, palisading walls, guide/protection walls; proper

Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
		• Waterlogging and improper drainage due to old or insufficient culverts and cross drains. • Safety risks for workers include accidents, injuries, and exposure to dust or noise. • Safety risks for local communities from heavy machinery, trucks, and construction activities. • Access disruption to schools, mosques, and markets along the road alignment. • Impact on small roadside businesses or vendors due to construction activities. • Potential soil and water contamination from fuel, lubricants, and construction materials. • Improved disaster resilience and evacuation route during floods or emergencies. Enhancement of local environment and aesthetics along the road corridor.	compaction and grading of shoulders; maintain drainage. • Rehabilitate existing culverts; construct additional cross-drains where needed; ensure free flow of water during and after construction. • Avoid encroachment on crop areas; coordinate with landowners; restore disturbed farmland after construction. • Install road signs, barriers, and speed control measures; conduct safety awareness sessions for residents, students, and road users. • Provide temporary access; schedule work to avoid peak market hours; inform vendors in advance. Store fuel and chemicals in safe, designated areas; prevent leakage; maintain spill containment measures; avoid disposal in drains or water bodies.
16	Bottola Chowmohona bazer to Raygonj UP office	• Dust generation during earthworks, road resurfacing, and material transportation, affecting nearby homes, shops, schools, and roadside settlements. • Temporary obstruction of pedestrian and local traffic, creating difficulties for villagers, school children, and vendors.	• Dust generation during earthworks, road resurfacing, and material transportation, affecting nearby homes, shops, schools, and roadside settlements. • Temporary obstruction of pedestrian and local traffic, creating difficulties for villagers, school children, and vendors.

Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
		- Blockage or inadequate cross-drainage and culverts, leading to waterlogging and localized flooding along the road. - Generation of construction waste and debris, which may pollute nearby fields or drainage channels if improperly managed. Disturbance to local livelihoods, including roadside vendors, small shops, and farmers during construction activities.	- Blockage or inadequate cross-drainage and culverts, leading to waterlogging and localized flooding along the road. - Generation of construction waste and debris, which may pollute nearby fields or drainage channels if improperly managed. Disturbance to local livelihoods, including roadside vendors, small shops, and farmers during construction activities.
17	Borovita Bazar to Pachim Dhaniram GPS	- Temporary obstruction of local traffic and pedestrian movement during culvert replacement and embankment works. - Soil erosion and slope instability along embankment sections, especially in low-lying areas prone to flooding. - Waterlogging and drainage blockage due to construction near existing culverts and cross drains. - Waste generation from construction debris and excavated soil causing visual pollution and potential blockage. - Community health and safety risks from heavy vehicles and construction near schools, mosques, and settlements. Enhanced disaster resilience and evacuation access to nearby flood-prone areas and embankments.	- Implement traffic management plan, provide warning signs, maintain alternative routes, and allow temporary pedestrian access. - Stabilize slopes with palisading or protection walls, compaction of earthworks, and turfing or roadside plantation. - Clean and rehabilitate existing drains, construct additional drainage where needed, and ensure water flow during monsoon. - Proper disposal at designated sites, reuse suitable materials for embankment, and maintain clean worksite. - Maintain buffer zones around religious or cultural sites, avoid construction activities during events, and consult local leaders before work. Climate-resilient road design, improved drainage, and clear linkages with embankment and other shelters.

Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
18	Borovita UP at Omer tapoti - Amsa Bazer - Borolay Bazar via Bulbul Khandakar house (Shahajahan Sochib house)	- Noise and vibration from construction equipment disturbing nearby residents, schools, and local community activities. - Temporary disruption of local traffic and pedestrian movement along the road corridor during construction activities. - Minor removal of roadside vegetation or small trees within the existing right of way. - Risk of soil erosion or embankment instability particularly during the rainy season. - Community safety risks due to movement of construction vehicles near settlements and agricultural fields. Temporary disturbance to roadside economic activities and access to houses or agricultural land.	- Restrict construction activities to daytime hours, maintain machinery properly, and avoid excessive noise near sensitive locations. - Install warning signs and barricades, ensure temporary access for pedestrians and local vehicles, and implement a basic traffic management plan. - Minimize cutting of trees and vegetation; undertake compensatory roadside tree plantation after construction where feasible. Maintain alternative access paths where required, schedule works in sections to minimize disruption and consult with local residents before major activities.
19	Harisher taluk-Sindurmati Road	- Dust generation during earthworks, road resurfacing, and material transportation, affecting nearby homes, shops, schools, and roadside settlements. - Temporary obstruction of pedestrian and local traffic, creating difficulties for villagers, school children, and vendors. - Blockage or inadequate cross-drainage and culverts, leading to waterlogging and localized flooding along the road.	- Regular sprinkling of water on roads, covering transport vehicles, limiting speed of vehicles, and maintaining construction equipment to minimize dust. - Construct protection walls, palisading walls, and guide walls where required; use compaction and proper grading to stabilize embankments. - Maintain access to businesses, communicate construction schedules in advance, and coordinate temporary relocation or alternate access routes if required.

Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
		- Generation of construction waste and debris, which may pollute nearby fields or drainage channels if improperly managed. - Disturbance to local livelihoods, including roadside vendors, small shops, and farmers during construction activities.	Ensure road maintenance after construction, integrate road safety features, and promote roadside plantation for environmental enhancement.

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 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 benefits—enhanced connectivity, safer access to flood shelters, and improved resilience of rural communities—while 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 Roumari, Rajarhat, Bhurungamari, Ulipur, Nageshwari, Phulbari, and Kurigram 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, Construction and Operation Phase

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	- No land acquisition is allowed in or nearby areas of the sub-project, or for any sub-project related activities. Therefore, no mitigation measures are suggested in this respect. - If and whenever any land/physical assets related grievances are raised at any point of the subproject implementation, project GRCs will take due course of actions to resolve the issues or grievances.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of livelihood	- Under this subproject, there is no scope of negative impact on the livelihoods of adjacent communities or people. - Contractors will be encouraged to engage local labors (both skilled and unskilled) as priority at their construction works, and women labor would get higher priority in recruitment.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs - All the safeguard documents will be disclosed to all relevant stakeholders.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.		
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating dust and noise)	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Sanitation and water supply	- Sanitation facilities (male and female toilets, wash-basins, etc.) for workers and constructor's officials/employees will be provided. - Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.	Contractor	Environmental Consultant of PIU
Pre-	Site Selection for workers	Workers camp, site office and stack yard should be	Contractor	Environmental

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Stage	camps, stack yards & implementing interventions: Generation of ESHS issues.	located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. • No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. • Construction of sanitary latrine with septic tank for both male and female workers and staffs; and ensure regular cleaning of those. • Provision of waste bins/ cans, where appropriate, • Litter is to be collected daily. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly		Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage; removal/relocation of utility services	• All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. • Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow. • Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place.	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Sub project intervention must avoid natural disturbance to existing slop and natural drainage. • Existing utility services must be relocated or adjusted where they obstruct the works or pose a risk of damage, in close cooperation with the appropriate authority. • The contractor must ensure sound environment for the local residents near the sub project site.		
Construction Activity	Noise from construction works	• Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works.	Contractor	Environmental Consultant of PIU
Construction Activity	Dust	• Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter)],	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. - Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. - Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. - Construction materials should be covered properly while carrying in vehicles to the site.		
Construction Activity	Safety Issues	- Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance) - Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. - Records of every training must be kept at site. - All kinds of Child labour are completely prohibited in every site. - Every construction materials storage site will be well fenced by Tin and safety caution tape.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Traffic Management	- Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. - Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. - Local traffic police department should be contacted, if traffic problem becomes more complex.	Contractor	Environmental Consultant of PIU
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- Water sources (e.g., ground or surface water) for construction works will be determined in consultation with the local DPHE office, considering the availability of nearby resources and technical options, and potential risks of extracting water from the same sources used by other consumer groups especially during the critical period. - Water from any installed tubewell or an existing surface water bodies within the nearby places will be used for construction works, if the available water quality satisfies the required standards for construction works.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority need to be taken before extraction or setting up bore wells. • Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. • Local community must be consulted before any construction works start.		
Construction Activity	Increase in road accidents	• Maintain safety measures during the movement of heavy machinery and equipment. • Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness.	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	• 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	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Labour related issues and grievances	• A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		
Construction Activity	Waste Management: Improper management and handling of	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
	hazardous and non-hazardous waste during construction.	• Waste from the temporary accommodation facilities for labor • Waste from equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. • Working areas are kept clean and tidy at all times. • Construction site is to be checked for spills of substances i.e. chemical, oil, etc. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. • Refueling areas and other fluid transfer areas will be imperviously paved. • Workers will be trained on the correct transfer and handling of fuels and chemicals and the response		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. • Applicability of the Hazardous Waste Management Rules.		
Construction Activity	Slipping of soil masses, dust deposition, draining or spillage of chemicals/contaminants, etc. to nearby water bodies	• Slope protection measures (proper compaction, palisading or protection walls, etc.) will be taken before starting work at any sensitive section of the road. • Dust suppression measures and material storage and handling procedure have to be undertaken with proper care and vigilance to avoid or minimize the impacts.	Contractor	Environmental and Social Development Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: • The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. • Exposure to health events during construction activities such as manual	• All construction equipment will be properly inspected timely. • The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. • Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. • Proper Signpost at any slippery areas will be ensured in construction site.	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	• Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. • This sub project will have Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. • All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. • Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. • All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		stroke, and dehydration. Written records of this awareness training shall be kept on site. • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. • Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	• Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. - All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.		
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage: Pollution from waste materials.	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	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	Health & Safety risks to workers and local community.	is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; (iv) all imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. The contractor must arrange the cancellation of all temporary services.		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Solid organic wastes should be stored in bins and/or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time.	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		engagement shall be borne from the Contractor's management budget. Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.		
Operation & Maintenance	Road Safety. Impacts include: - The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers. - Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries.	Road safety issues can be minimized in following ways: - By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. - Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. - All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.	UE (Upazila Engineer)	District Executive Engineer, LGED
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	UE	District XEN, LGED

5.3 Monitoring of ES Performance

An effective monitoring system is crucial to ensure the proper implementation of preventive, management, and mitigation measures outlined in the ESMP and ESCOPs throughout both the construction and operational phases of the community roads improvement sub-project. 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 (DSC), while also involving relevant institutions such as the local community stakeholders where applicable.

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, the World Bank Environmental and Social Framework (ESF), and the internal Environmental and Social Management Guidelines of the Local Government Engineering Department.

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 and Dust Control	Particulate matter, visible dust at site, dust suppression measures	Weekly during excavation, earthwork, demolition	Contractor (monitoring & Implementation); PIU/D&SC (verification)	Visual inspection, photo documentation
2	Noise and Vibration	Noise level (dB) near sensitive receptors; vibration during pile driving/demolition	Weekly or during pile driving; daily for high-impact works	Contractor (monitoring & Implementation); PIU/D&SC (verification)	Noise meter readings, community feedback
3	Water Quality and Drainage	Turbidity, pH, oil/grease presence in runoff; drainage flow condition	Monthly during rainy season; after major rainfall	Contractor (monitoring & Implementation); PIU/D&SC (verification)	Water sampling, field observation
4	Soil Erosion and Sedimentation	Silt traps, slope stabilization, drainage cleanliness	Weekly during earthworks and monsoon	Contractor (monitoring & Implementation); PIU/D&SC (verification)	Visual inspection, photographs

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report of Community Roads for Kurigram District (GCCR-15)

Sl. No.	ES Aspect / Issue	Monitoring Parameters / Indicators	Frequency / Timing	Responsibility	Means of Verification / Monitoring Method
5	Waste Management (Sewage and Solid wastes)	Sanitary Latrines, Segregation, storage, disposal of solid and hazardous waste; reuse of materials	Weekly	Contractor (monitoring & Implementation); PIU/D&SC (verification)	No. of latrines, waste bins, disposal receipts, site inspection
6	Excavation of road or underground	Dust suppression, debris containment, PPE use, safety barrier, debris reuse/disposal	Daily during excavation	Contractor (Safety Officer); PIU/D&SC verification	OHS checklist, photo record, waste log
7	Pile Driving (SOP)	Noise/vibration limits, use of vibration damping, safety cordons, PPE compliance	Daily during piling operations	Contractor (Engineer); PIU/D&SC (Verification)	Noise/vibration records, site inspection
8	Temporary Schooling facilities	School structure with toilets as per design	Before Construction	Contractor (Engineer); PIU/D&SC (Verification)	Visual Inspection; Interview of Students, teachers
9	Material Sourcing	Quality and source check for sand, brick, aggregate, timber suppliers	Per delivery	Contractor; verified by PIU	Delivery challan, supplier permit
10	Material Storage and Fencing	Storehouse, Coverage over materials, Spillage protection of hazardous materials, worksite and inner fencing	Before Construction and maintaining all through. Daily checking of spillage.	Contractor (Implementation); PIU/D&SC (verification)	Inspection, Incidents reporting, GRM logbook
11	Tree Cutting and Compensatory Plantation	Tree removal count, plantation ratio (3:1), species survival rate	Before construction; quarterly during plantation period	Contractor (Implementation); PIU/D&SC (verification)	Tree register, survival verification report
12	Occupational Health and Safety (OHS)	PPE use, toolbox talks, safety signage, first-aid, accident record	Daily site check; monthly reporting	Contractor (Safety Officer); PIU/D&SC (verification)	Safety checklist, accident log, training record
13	Community Health and Safety	Access control, fencing, signage, traffic management, GRM complaints	Weekly	Contractor (Implementation); PIU/D&SC (verification)	Visual inspection, TMP, GRM log
14	Labour and Working Conditions	Wage payment, working hours, absence of child/forced labour, sanitation, accommodation	Monthly	Contractor (monitoring & Implementation); PIU/D&SC (verification)	Worker interview, payroll record, inspection

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report of Community Roads for Kurigram District (GCCR-15)

Sl. No.	ES Aspect / Issue	Monitoring Parameters / Indicators	Frequency / Timing	Responsibility	Means of Verification / Monitoring Method
15	Local Labor Engagement	No. of local, female and physically challenged labors engaged	Monthly	Contractor (monitoring & Implementation); PIU/D&SC (verification)	Labor logbook, Payroll record, inspection
16	Gender and GBV/SEA Risk Management	Code of Conduct signed, GBV training conducted, availability of female grievance	Quarterly	Contractor; D&SC Gender Consultant	Training records, attendance list, GRM log
17	Cultural and Religious Sensitivity	Consultation records with mosque/madrassa committees; work-hour adjustments	As required	Contractor (Implementation); PIU/D&SC (verification)	Meeting minutes, site observation
18	Land Use and Ownership	Land ownership verification, voluntary donation documentation	Before construction	PIU/D&SC Social Specialist	Legal documents, meeting records
19	Stakeholder Engagement and Disclosure	Number of consultations held; disclosure signage posted; feedback addressed	Quarterly	Contractor (Implementation); PIU/D&SC (verification)	Consultation minutes, disclosure photos
20	Grievance Redress Mechanism (GRM)	Number of complaints received/resolved; resolution time	Monthly	Contractor (recording); PIU (review)	GRM register, resolution summary
21	Biodiversity Protection	Protection of nearby beels/canals; no dumping of waste or fill	Weekly	Contractor (Implementation); PIU/D&SC (verification)	Site observation, photographic evidence
22	Emergency Preparedness and Fire Safety	Fire extinguisher, lightning protection, evacuation signage	Monthly	Contractor; PIU	Site inspection, safety drill record
23	Post-Construction Site Restoration	Debris clearance, landscaping, reinstatement of access roads	After construction completion	Contractor; PIU/D&SC verification	Site handover inspection, photos
24	Training and Capacity Building	Number of trainings on ES, OHS, GBV, emergency response	Quarterly	PIU/D&SC; Contractor	Attendance, training reports
25	Compliance Reporting	Submission of monthly ESMP implementation reports to PIU/D&SC	Monthly	Contractor (Implementation); PIU (verification)	Report submission record

5.4 Capacity Development Measures

Effective management of Environmental, Social, and Gender issues in construction projects requires proactive capacity building for all actors involved including the Implementing Agency, Contractors, and Supervision Consultants. To ensure compliance with environmental and social standards, all project stakeholders must be adequately trained and informed about their responsibilities, mitigation measures, and reporting mechanisms. Capacity-building programs through formal training, 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 5.2 outlines the recommended capacity-building measures, target participants, training frequency, and key topics to be covered under an ESG management framework for building and road construction projects.

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

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

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

5.5 Tree Plantation Plan

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

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

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

Table 5.4: The List of Selected Species for Tree Plantation

SL No.	Local Name	English Name	Scientific Name
Timber Tree			
1	Debdaru	Indian Mast Tree	<i>Polyalthia longifolia</i>
2	Gurjan	Gurjun	<i>Dipterocarpus turbinatus</i>
3	Silkoroi	White Siris	<i>Albizia procera</i>
4	Segun	Teak	<i>Tectona grandis</i>
5	Akashmoni	Earleaf Acacia	<i>Acacia auriculiformis</i>
6	Katbadam	Bengal almond	<i>Terminalia calappa</i>
7	Jarul	Giant Crape-myrtle	<i>Lagerstroemia speciosa</i>
	Punal	Asian indigo	<i>Callophyllum inophyllum</i>
8	Mahogany	Mahogany	<i>Swietenia mahagoni</i>
9	Epil-Ipil	White Lead Tree	<i>Leucaena leucocephala</i>
Fruit Tree			
10	Am	Mango	<i>Mangifera indica</i>
11	Kathal	Jackfruit	<i>Artocarpus heterophyllus</i>
12	Peyara	Guava	<i>Psidium guajava</i>
13	Jam	Black Berry	<i>Syzygium cumini</i>
14	Khejur	Date Palm	<i>Phoenix sylvestris</i>
15	Tal	Palm	<i>Borassus flabelliformis</i>
16	Amra	Hogplum	<i>Spondias pinnata</i>

SL No.	Local Name	English Name	Scientific Name
17	Narikel	Coconut	<i>Cocos nucifera</i>
18	Chalta	Elephant Apple	<i>Dillenia indica</i>
19	Kul/Boroi	Jujube	<i>Ziziphus mauritiana</i>
20	Lichu	Lychee	<i>Litchi chinesis</i>
21	Tetul	Tamarind	<i>Temarindus indica</i>
22	Jambura	Pumelo	<i>Citrus grandis</i>
23	Bel	Wood Apple	<i>Aegle marmelos</i>
24	Kodbel	Wood Apple	<i>Limonia acidissima</i>
25	Jolpai	Olive	<i>Elaeocarpus floribundus</i>
Medicinal Tree			
26	Neem	Indian lilac	<i>Azarlira chlaindica</i>
27	Arjun	Arjun	<i>Terminalia arjuna</i>
28	Amlaki	Indian gooseberry	<i>Phyllanthus emblica</i>
29	Horitoki	Chebolic Myrobalan	<i>Terminalia chebula</i>
30	Bohera	Beleric Myrobalan	<i>Terminalia belliricha</i>
31	Akando	White Aak Plant	<i>Calotropis gigantea</i>
Fuel Tree			
32	Shimul	Silk Cotton Tree	<i>Bombox ceiba</i>
33	Gab	Malabar ebony	<i>Diospyros spp.</i>
34	Kadam	Burflower Tree	<i>Anthocephalus chinensis</i>
35	Jhau	Tamarisk	<i>Tamarix dioica</i>
36	Pituli	Patchouli	<i>Trewta nudiflora</i>

According to the prevailing practice in Bangladesh, the Forest Department 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.

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 5.6.

Table 5.5: SOP for Tree Plantation at road side

Plant Selection	Height and Spacing	Planting and Fencing Details	Maintenance
	• Most types of trees average height should be more than 1 meter which equals more than 3ft. at the time of planting; • As all tree heights are not same, at the time of some specific tree plantation Upazila and Contractor should communicate with Consultant Team; • Tree plantation spacing should be 3m c/c from one tree to another tree	Preparation of plantation pits will involve excavation of pits measuring 600 mm × 600 mm × 450 mm. The excavated soil will be mixed with loamy silty soil and cow dung to create suitable planting media. Saplings will then be planted and securely supported using 1800 mm 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.	• Watering: needs two times in a day; Prefer specially rainy season for tree plantation if it is in other season then proper watering is needed; • Needs weed out grass and other unnecessary vegetation • Need regular monitoring by the Contractor till the end of defect liability period and later the Office of the Upazila Engineer.

5.6 Cost of Environmental and Social Enhancement Works in BOQ

The estimated cost of environmental and social enhancement works has been incorporated into the Bill of Quantities (BOQ) for the sub-project covering eight identified community roads across Hatibandha, Patgram, Kaliganj, and Lalmonirhat 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 28 – April 03, 2026. Public consultation meetings were conducted alongside covering of the nineteen (19) identified community roads. Refer to **Annexure 2** for details of the attendance of the meeting. Participants included 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 of these consultations included requests for proper traffic management near schools and marketplaces, adequate drainage improvements to prevent waterlogging, compensation or replantation of 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 roadside locations across Kurigram 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—including residents, community leaders, school authorities, religious institution representatives, and local government officials, and 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, mobility during construction and other construction-related disturbances. The feedback collected through these consultations was systematically documented, analyzed, and incorporated into the Environmental and Social Management Plan (ESMP) and project design to ensure that mitigation measures are practical, locally relevant, and responsive to the needs and expectations of the affected communities.

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

Table 6.1: Consultation Meetings Summary

Sl. No.	Name of Community Road	Date DD-MM-YYYY	Venue	Main Participant Groups	No. of Participants
1.	(0501) Jadur char Natungram ghat Road to Dhanarchar FCD (149794115)	29.03.2026	Jadur Char	The local individuals, elites, chairman and/or members of the respective Union Parishad, farmers, businessmen etc.	8

Sl. No.	Name of Community Road	Date DD-MM-YYYY	Venue	Main Participant Groups	No. of Participants
2.	Chaktabari-Thanthonia para via Koraikandi (149795006)	29.03.2026	Koraiardi Village	The local people, farmers, service, and holders.	11
3.	Amertal - Sukdev Road. (149774050)	30.03.2026	Daspara	Teachers, businesspeople, day labourers, agriculture labour, and housewife.	7
4.	Tograi hat - Rajarhat UP (Shahed Bazar) via Taltola Mondolpara. (149774025)	02.03.2026	Alongside of the proposed road	Farmers, day labourers, businesspeople, and fishermen.	9
5.	Taltola Pucca road - Dinor via Kalirpat. (149775048)	01.04.2026	Bajemujrai	Farmers, agriculture day labourers, engineers, students, housewives, and businesspeople,	14
6.	Basrah Madrasha - Jarijar Tutapaikar Bazer Road. (149774059)	31.03.2026	Baroshudai	Agriculture day labourers, businesspeople.	06
7.	Sonatali Pukurpar to Vot hat Bazar via Sore Beparir Ghat. (149064050)	01.04.2026	Sonatoli	Businesspeople, electricians, students, and farmers.	12
8.	Bangosona Hat - Shahi Bazar (149064041)	02.04.2026	Shahi Bazar	Businesspeople, Students, agriculture day labourers.	10
9.	Dhamsreni UP office, Anantapur Hat (149943011)	03.04.2026	Hatia Vobesh	Businesspeople, farmers, and drivers.	8
10.	Ulipur Bazar Rd.-Bozra Hat (149944034)	28.03.2026	Kalpani Bazar	Businesspeople, farmers.	12
11.	Holokhana Sarkararpara Eidgha Field to Hemarkuti WAPDA Embankment (149525088)	28.03.2026	Hemerkuti	Framer groups, businesspeople, and students.	16
12.	Bancharam-BWDB Embakmen	28.03.2026	Bancharampur, Nidhiram.	Businesspeople, day labourers,	20

Sl. No.	Name of Community Road	Date DD-MM-YYYY	Venue	Main Participant Groups	No. of Participants
	(149525012)			farmers, and service holders.	
13.	Neferdarga H/O Aranda Kamar (149525001)	28.03.2026	Baraibari, ververy.	Job holders, tailors, and farmers.	20
14.	Boribari Mouzar Asmoth Alir Near Pucca Road to Modhokhamar Holkhana GPS (149525200)	28.03.2026	Shuvar kuti, Boraibari	Jobholders and farmers.	20
15.	Khamar para RHD road, Bot tola to Bamandanga UP office (149615078)	01.04.2026	Sanjayarvita, Kamarpara,	Teachers, students, businesspeople, service holders, and farmers.	20
16.	Bottola Chowmohona bazar to Raygonj UP office. (149613016)	01.04.2026	Modhur haiyle.	Doctors, emam, students, service holders, and farmers.	18
17.	Borovita Bazar to Paschim Dhaniram GS (149184074)	01.04.2026	Naudabos, Barabhita	Businesspeople, service holders, day labourers, students, and farmers.	20
18.	Borovita UP at Omer tapoti - Amsa Bazer - Boro lay Bazer via Bulbul Khandakar house (Shahajahan Sochib house) (149184094)	01.04.2026	Barabhita	Businesspeople, service holders, day labourers, and farmers.	20
19.	Harisher taluk-Sindurmati rd. (149775028)	01.04.2026	Hariswer Taluk	Teachers, lecturers, housewife, agriculture day labourers, health workers, and servicemen.	20



Figure 6.1: Public Consultation through FGD's and KII alongside the proposed road

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

During the public consultation meetings conducted in the project influence areas of the proposed community road sub-projects in Kurigram 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 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.	(0501) Jadur char Natungram ghat Road to Dhanarchar FCD (149794115)	29.03.2026 and Jadur Char	- Existing road surfaces are damaged and become muddy and difficult to use during the rainy season. - Some road sections remain submerged due to poor drainage and low elevation. - Need to ensure safe and quick access to flood shelters during emergencies. - Construction waste may be dumped improperly and affect nearby land or water bodies. - Potential impact on nearby agricultural lands and irrigation channels. - Need for community awareness regarding project activities and safety measures.	- Improve road pavement and strengthen the road base to ensure all-weather accessibility. - Raise the road level where necessary and construct adequate side drains and cross-drainage structures. - Design road improvements to ensure uninterrupted connectivity to nearby flood shelters. - Install road safety signs, speed control measures, and pedestrian-friendly features near schools and settlements. - Conduct community awareness programs and maintain regular communication with local stakeholders. - Encourage contractors to prioritize hiring local workers where possible.
2.	Chaktabari-Thanthonia para via Koraikandi (149795006)	29.03.2026 and Koraiardi Village	- Dust pollution during construction may affect nearby houses, schools, and markets. - Noise and disturbance may occur near schools, mosques, and residential areas. - Traffic congestion and safety risks may occur during construction activities. - Concerns about removal of roadside trees during road widening.	- Regular water spraying and proper management of construction materials to minimize dust generation. - Restrict heavy construction activities during sensitive hours and maintain noise control measures. - Prepare and implement a traffic management plan including warning signs, barriers, and designated detours. - Avoid unnecessary tree cutting; where unavoidable, implement compensatory plantation programs.

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
			• Temporary disruption to access of local houses, shops, and agricultural lands during construction. • Need to ensure safe and quick access to flood shelters during emergencies. • Risk of erosion and damage to road shoulders during heavy rainfall.	• Maintain temporary access routes and inform the community in advance about construction schedules. • Design road improvements to ensure uninterrupted connectivity to nearby flood shelters. • Strengthen road shoulders and provide slope protection and erosion control measures. • Install road safety signs, speed control measures, and pedestrian-friendly features near schools and settlements. • Ensure proper drainage design and avoid blockage of irrigation channels during construction.
3.	Amertal - Sukdev Road. (149774050)	30.03.2026 and Daspara	• Waterlogging occurs in some low-lying sections of the road. • Road width is narrow in certain segments which creates difficulty for two-way traffic. • Dust pollution during construction may affect nearby households and shops. • Farmers depend on roadside access to transport agricultural products to local markets. • Some households are located very close to the road alignment. • Flood shelter accessibility is important during flood emergencies.	• The road surface should be improved with proper pavement and compaction to ensure all-weather accessibility. • Adequate roadside drainage and culverts should be constructed to facilitate smooth water flow and prevent waterlogging. • Minor widening should be considered within the available Right of Way (ROW) to improve traffic movement and safety. • Regular water spraying and proper construction management should be implemented to minimize dust generation. • Traffic management measures, warning signs, and temporary safety barriers should be installed during construction.

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
			Community members requested installation of safety signage.	Construction activities should be planned to avoid blocking access to agricultural lands and transport routes.
4.	Tograi hat - Rajarhat UP (Shahed Bazar) via Taltola Mondolpara. (149774025)	02.03.2026 and	- Road width is narrow in certain segments which creates difficulty for two-way traffic. - Dust pollution during construction may affect nearby households and shops. - Movement of construction vehicles may create safety risks for pedestrians and schoolchildren. - Roadside trees provide shade and environmental benefits for the community. - Farmers depend on roadside access to transport agricultural products to local markets. - Some households are located very close to the road alignment. - Improper disposal of construction waste may affect nearby agricultural land. - Community members requested installation of safety signage.	- Minor widening should be considered within the available Right of Way (ROW) to improve traffic movement and safety. - Regular water spraying and proper construction management should be implemented to minimize dust generation. - Traffic management measures, warning signs, and temporary safety barriers should be installed during construction. - Contractors should maintain safe working distances and ensure minimal disturbance to local residents. - The road improvement should prioritize ensuring safe and quick access to the nearby flood shelter. - Construction work should be scheduled during daytime and equipment should be properly maintained to reduce noise. - Waste materials should be properly managed and disposed of at designated locations. - Road safety signs and markings should be installed near settlements, intersections, and flood shelters.

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
5.	Taltola Pucca road -Dinor via Kalirpat. (149775048)	01.04.2026 and Bajemujrai	- Waterlogging occurs in several low-lying sections of the road during monsoon. - Movement of school students and pedestrians may be at risk during construction activities. - Dust generation during construction may affect nearby houses and roadside shops. - Noise from construction machinery may disturb nearby residents and institutions. - Some roadside trees may need to be removed during road widening. - Temporary disruption of local transportation and market access may occur during construction.	- Adequate side drains and cross-drainage structures (culverts) should be constructed or improved to ensure proper drainage. - Contractors should implement traffic safety measures, including warning signage, speed control, and safe pedestrian passage near schools and settlements. - A temporary traffic management plan should be prepared to ensure continued movement of local transport and access to markets such as Kabarstan Hat and Sarker Hat. - Installation of road safety signage, speed breakers, and road markings near market areas is recommended.
6.	Basrah Madrasha - Jarijar Tutapaikar Bazer Road. (149774059)	31.03.2026 and Baroshudai	- Noise from construction machinery may disturb nearby residents and institutions. - Some roadside trees may need to be removed during road widening. - Safety concerns near local markets due to increased traffic after road improvement. - Risk of improper disposal of construction waste near agricultural lands. - Community members emphasized the importance of quick access to flood shelters during emergencies.	- The road should be properly improved and strengthened with suitable pavement to ensure all-weather accessibility for local residents and vehicles. - Contractors should implement traffic safety measures, including warning signage, speed control, and safe pedestrian passage near schools and settlements. - Regular water spraying and proper construction material management should be carried out to minimize dust pollution. - Construction work should be scheduled during daytime and machinery should be properly maintained to reduce noise levels.

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
				- Tree cutting should be minimized, and compensatory tree plantation should be undertaken along suitable roadside locations. - The road design should ensure uninterrupted connectivity to nearby flood shelters and maintain the road at an appropriate elevation to remain usable during floods.
7.	Sonatali Pukurpar to Vothat Bazar via Sore Beparir Ghat. (149064050)	01.04.2026 and Sonatoli Bazar.	- Existing road surfaces are damaged and become muddy and difficult to use during the rainy season. - Some road sections remain submerged due to poor drainage and low elevation. - Need to ensure safe and quick access to flood shelters during emergencies. - Construction waste may be dumped improperly and affect nearby land or water bodies. - Potential impact on nearby agricultural lands and irrigation channels. - Need for community awareness regarding project activities and safety measures.	- Improve road pavement and strengthen the road base to ensure all-weather accessibility. - Raise the road level where necessary and construct adequate side drains and cross-drainage structures. - Design road improvements to ensure uninterrupted connectivity to nearby flood shelters. - Install road safety signs, speed control measures, and pedestrian-friendly features near schools and settlements. - Conduct community awareness programs and maintain regular communication with local stakeholders. - Encourage contractors to prioritize hiring local workers where possible.
8.	Bangosona Hat - Shahi Bazar (149064041)	02.04.2026 and Shahi Bazar.	Waterlogging occurs at several low-lying sections of the road during heavy rainfall.	Construct adequate side drains and cross-drainage structures to ensure proper water flow and prevent waterlogging.

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
			- Dust generation during construction may affect nearby houses, schools, and shops. - Some roadside trees may need to be removed during road improvement works. - Risk of accidents during construction due to movement of heavy vehicles and machinery. - Drainage obstruction could affect nearby agricultural lands. - Waste materials from construction may be dumped near agricultural fields or water bodies. - Workers' safety during construction activities. - Community members requested regular maintenance after project completion.	- Regular water spraying and proper material handling should be implemented to control dust pollution. - Minimize tree cutting where possible and implement compensatory tree plantation along the roadside. - Implement a traffic management plan with proper signage, barricades, and safety personnel. - Ensure proper drainage design and avoid blocking natural water channels during construction. - Proper waste management practices should be implemented, and disposal sites should be designated in advance. - Ensure the use of Personal Protective Equipment (PPE) and implement occupational health and safety measures at construction sites. - Establish a maintenance mechanism and monitoring system to ensure long-term road usability.
9.	Dhamsreni UP office, Anantapur Hat (149943011)	03.04.2026 and Hatia Vobesh.	- Noise from construction machinery may disturb nearby residents and institutions. - Some roadside trees may need to be removed during road widening. - Safety concerns near local markets due to increased traffic after road improvement.	- The road should be properly improved and strengthened with suitable pavement to ensure all-weather accessibility for residents and vehicles. - Contractors should implement traffic safety measures, including warning signage, speed control, and safe pedestrian passage near schools and settlements.

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
			• Risk of improper disposal of construction waste near agricultural lands. • Community members emphasized the importance of quick access to flood shelters during emergencies.	• Regular water spraying and proper construction material management should be carried out to minimize dust pollution. • Construction work should be scheduled during daytime and machinery should be properly maintained to reduce noise levels. • Tree cutting should be minimized, and compensatory tree plantation should be undertaken along suitable roadside locations. • <i>The road design should ensure uninterrupted connectivity to nearby flood shelters and maintain the road at an appropriate elevation to remain usable during floods.</i>
10.	Ulipur Bazar Rd.- Bozra Hat (149944034)	28.03.2026 and Kalpani Bazar.	▪ Existing road surface is uneven and becomes muddy during monsoon season. ▪ Narrow road width causes difficulty for two-way traffic movement. ▪ Some roadside trees may need to be removed during road improvement works. ▪ Traffic safety concerns near settlements and local markets. ▪ Risk of accidents during construction due to movement of heavy vehicles and machinery. ▪ Temporary disruption of access to houses, shops, and agricultural lands during construction. ▪ Safety concerns of school children and pedestrians using the road.	▪ Improve the road pavement with proper compaction and surfacing to ensure all-weather accessibility. ▪ Widen the road within the available Right of Way (ROW) where feasible to improve vehicle movement and safety. ▪ Minimize tree cutting where possible and implement compensatory tree plantation along the roadside. ▪ Install traffic signs, speed breakers, and safety markings near populated areas and markets. ▪ Implement a traffic management plan with proper signage, barricades, and safety personnel. ▪ Maintain temporary access routes and inform residents about construction schedules.

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
			Need for reliable road access to nearby flood shelters during emergencies.	- Provide pedestrian safety measures, signage, and speed control near schools and populated areas. - Ensure that road elevation, pavement strength, and drainage are designed to remain functional during flood conditions.
11.	Holokhana Sarkararpara Eidgha Field to Hemerkuti WAPDA Embankment (149525088)	28.03.2026 and Hemerkuti.	- Waterlogging occurs in several low-lying sections of the road during monsoon. - Movement of school students and pedestrians may be at risk during construction activities. - Dust generation during construction may affect nearby houses and roadside shops. - Noise from construction machinery may disturb nearby residents and institutions. - Some roadside trees may need to be removed during road widening. - Temporary disruption of local transportation and market access may occur during construction.	- Construct adequate side drains and cross-drainage structures to ensure proper water flow and prevent waterlogging. - Regular water spraying and proper material handling should be implemented to control dust pollution. - Minimize tree cutting where possible and implement compensatory tree plantation along the roadside. - Implement a traffic management plan with proper signage, barricades, and safety personnel. - Ensure proper drainage design and avoid blocking natural water channels during construction. - Proper waste management practices should be implemented, and disposal sites should be designated in advance. - Ensure the use of Personal Protective Equipment (PPE) and implement occupational health and safety measures at construction sites. - Establish a maintenance mechanism and monitoring system to ensure long-term road usability.

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
12.	Bancharam-BWDB Embakmen (149525012)	28.03.2026 and Bancharampur, Nidhiram.	▪ Road width is narrow in certain segments which creates difficulty for two-way traffic. ▪ Dust pollution during construction may affect nearby households and shops. ▪ Movement of vehicle construction may create safety risks for pedestrians and schoolchildren. ▪ Roadside trees provide shade and environmental benefits for the community. ▪ Farmers depend on roadside access to transport agricultural products to local markets. ▪ Some households are located very close to the road alignment. ▪ Improper disposal of construction waste may affect nearby agricultural land. ▪ Community members requested installation of safety signage.	• Minor widening should be considered within the available Right of Way (ROW) to improve traffic movement and safety. • Regular water spraying and proper construction management should be implemented to minimize dust generation. • Traffic management measures, warning signs, and temporary safety barriers should be installed during construction. • Contractors should maintain safe working distances and ensure minimal disturbance to local residents. • The road improvement should prioritize ensuring safe and quick access to the nearby flood shelter. • Construction work should be scheduled during daytime and equipment should be properly maintained to reduce noise. • Waste materials should be properly managed and disposed of at designated locations. • Road safety signs and markings should be installed near settlements, intersections, and flood shelters.
13.	Neferdarga H/O Aranda Kamar (149525001)	28.03.2026 and Baraibari, ververy	• Noise from construction machinery may disturb nearby residents and institutions.	• The road should be properly improved and strengthened with suitable pavement to ensure all-weather accessibility for residents and vehicles.

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
			- Some roadside trees may need to be removed during road widening. - Safety concerns near local markets due to increased traffic after road improvement. - Risk of improper disposal of construction waste near agricultural lands. - Community members emphasized the importance of quick access to flood shelters during emergencies	- Contractors should implement traffic safety measures, including warning signage, speed control, and safe pedestrian passage near schools and settlements. - Regular water spraying and proper construction material management should be carried out to minimize dust pollution. - Construction work should be scheduled during daytime and machinery should be properly maintained to reduce noise levels. - Tree cutting should be minimized, and compensatory tree plantation should be undertaken along suitable roadside locations. - The road design should ensure uninterrupted connectivity to nearby flood shelters and maintain the road at an appropriate elevation to remain usable during floods.
14.	Boribari Mouzar Asmoth Alir Near Pucca Road to Modhokhamar Holkhana GPS (149525200)	28.03.2026 and Shuvar kuti, Boraibari	- Existing road surface is uneven and becomes muddy during monsoon season. - Narrow road width causes difficulty for two-way traffic movement. - Some roadside trees may need to be removed during road improvement works. - Traffic safety concerns near settlements and local markets.	- Improve the road pavement with proper compaction and surfacing to ensure all-weather accessibility. - Widen the road within the available Right of Way (ROW) where feasible to improve vehicle movement and safety. - Minimize tree cutting where possible and implement compensatory tree plantation along the roadside. - Install traffic signs, speed breakers, and safety markings near populated areas and markets.

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
			▪ Risk of accidents during construction due to movement of heavy vehicles and machinery. ▪ Temporary disruption of access to houses, shops, and agricultural lands during construction. ▪ Safety concerns of school children and pedestrians using the road. ▪ Need for reliable road access to nearby flood shelters during emergencies.	▪ Implement a traffic management plan with proper signage, barricades, and safety personnel. ▪ Maintain temporary access routes and inform residents about construction schedules. ▪ Provide pedestrian safety measures, signage, and speed control near schools and populated areas. ▪ Ensure that road elevation, pavement strength, and drainage are designed to remain functional during flood conditions.
15.	Khamar para RHD road, Bot tola to Bamandanga UP office (149615078)	01.04.2026 and Sanjayarvita, Kamarpara.	• Waterlogging occurs at several low-lying sections of the road during heavy rainfall. • Dust generation during construction may affect nearby houses, schools, and shops. • Some roadside trees may need to be removed during road improvement works. • Risk of accidents during construction due to movement of heavy vehicles and machinery. • Drainage obstruction could affect nearby agricultural lands. • Waste materials from construction may be dumped near agricultural fields or water bodies. • Workers' safety during construction activities.	• Construct adequate side drains and cross-drainage structures to ensure proper water flow and prevent waterlogging. • Regular water spraying and proper material handling should be implemented to control dust pollution. • Minimize tree cutting where possible and implement compensatory tree plantation along the roadside. • Implement a traffic management plan with proper signage, barricades, and safety personnel. • Ensure proper drainage design and avoid blocking natural water channels during construction. • Proper waste management practices should be implemented, and disposal sites should be designated in advance.

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
			Community members requested regular maintenance after project completion.	- Ensure the use of Personal Protective Equipment (PPE) and implement occupational health and safety measures at construction sites. - Establish a maintenance mechanism and monitoring system to ensure long-term road usability.
16.	Bottola Chowmohona bazer to Raygonj UP office. (149613016)	01.04.2026 and Modhur haiyle.	- Noise from construction machinery may disturb nearby residents and institutions. - Some roadside trees may need to be removed during road widening. - Safety concerns near local markets due to increased traffic after road improvement. - Risk of improper disposal of construction waste near agricultural lands. - Community members emphasized the importance of quick access to flood shelters during emergencies.	- The road should be properly improved and strengthened with suitable pavement to ensure all-weather accessibility for local residents and vehicles. - Contractors should implement traffic safety measures, including warning signage, speed control, and safe pedestrian passage near schools and settlements. - Regular water spraying and proper construction material management should be carried out to minimize dust pollution. - Construction work should be scheduled during daytime and machinery should be properly maintained to reduce noise levels. - Tree cutting should be minimized, and compensatory tree plantation should be undertaken along suitable roadside locations. - The road design should ensure uninterrupted connectivity to nearby flood shelters and maintain the road at an appropriate elevation to remain usable during floods.

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
17.	Borovita Bazar to Paschim Dhaniram GPS (149184074)	01.04.2026 and Naudabos, Barabhita	- Noise from construction machinery may disturb nearby residents and institutions. - Some roadside trees may need to be removed during road widening. - Safety concerns near local markets due to increased traffic after road improvement. - Risk of improper disposal of construction waste near agricultural lands. - Community members emphasized the importance of quick access to flood shelters during emergencies	- The road should be properly improved and strengthened with suitable pavement to ensure all-weather accessibility for residents and vehicles. - Contractors should implement traffic safety measures, including warning signage, speed control, and safe pedestrian passage near schools and settlements. - Regular water spraying and proper construction material management should be carried out to minimize dust pollution. - Construction work should be scheduled during daytime and machinery should be properly maintained to reduce noise levels. - Tree cutting should be minimized, and compensatory tree plantation should be undertaken along suitable roadside locations. - The road design should ensure uninterrupted connectivity to nearby flood shelters and maintain the road at an appropriate elevation to remain usable during floods.
18.	Borovita UP at Omer tapoti - Amsa Bazer - Boro lay Bazer via Bulbul Khandakar house (Shahajahan Sochib house)	01.04.2026 and Barabhita.	- Waterlogging occurs at several low-lying sections of the road during heavy rainfall. - Dust generation during construction may affect nearby houses, schools, and shops.	- Construct adequate side drains and cross-drainage structures to ensure proper water flow and prevent waterlogging. - Regular water spraying and proper material handling should be implemented to control dust pollution.

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
	(149184094)		- Some roadside trees may need to be removed during road improvement works. - Risk of accidents during construction due to movement of heavy vehicles and machinery. - Drainage obstruction could affect nearby agricultural lands. - Waste materials from construction may be dumped near agricultural fields or water bodies. - Workers' safety during construction activities.	- Minimize tree cutting where possible and implement compensatory tree plantation along the roadside. - Implement a traffic management plan with proper signage, barricades, and safety personnel. - Ensure proper drainage design and avoid blocking natural water channels during construction. - Proper waste management practices should be implemented, and disposal sites should be designated in advance. - Ensure the use of Personal Protective Equipment (PPE) and implement occupational health and safety measures at construction sites.

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
19.	Harisher Taluk-Sindurmati rd. (149775028)	01.04.2026 and Hariswer Taluk	- Existing road surface is uneven and becomes muddy during monsoon season. - Narrow road width causes difficulty for two-way traffic movement. - Some roadside trees may need to be removed during road improvement works. - Traffic safety concerns near settlements and local markets. - Risk of accidents during construction due to movement of heavy vehicles and machinery. - Temporary disruption of access to houses, shops, and agricultural lands during construction. - Safety concerns of school children and pedestrians using the road. - Need for reliable road access to nearby flood shelters during emergencies.	- Improve the road pavement with proper compaction and surfacing to ensure all-weather accessibility. - Widen the road within the available Right of Way (ROW) where feasible to improve vehicle movement and safety. - Minimize tree cutting where possible and implement compensatory tree plantation along the roadside. - Install traffic signs, speed breakers, and safety markings near populated areas and markets. - Implement a traffic management plan with proper signage, barricades, and safety personnel. - Maintain temporary access routes and inform residents about construction schedules. - Provide pedestrian safety measures, signage, and speed control near schools and populated areas. - Ensure that road elevation, pavement strength, and drainage are designed to remain functional during flood conditions.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the environmental and social assessment conducted for Community Roads in Kurigram District under the RIVER Project, it could be concluded that the proposed improvement of nineteen (19) community roads across Kurigram Sadar Upazila, Nageshwari Upazila, Bhurungamari Upazila, Phulbari Upazila, Rajarhat Upazila and Ulipur Upazila in Kurigram District is environmentally and socially feasible, provided that the proposed mitigation and management measures are properly implemented. The improvement of these 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 requirement of land acquisition and significantly reduces the risk of physical displacement of households/shops for 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 eventual 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 Kurigram 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 Kurigram Sadar, Nageshwari, Bhurungamari, Phulbari, Rajarhat and Ulipur upazilas. It is therefore recommended that the project may 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 KURIGRAM
DISTRICT (GCCR-15)

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

Name of Sub-Project: Improvement of Community Road for **Jadur char Natungram Ghat Road to Dhanarchar ID: 149794115**

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

District: Kurigram

Upazila: Rowmari

Union: Jadur Char

Name of Community/Local Area: Jadur Notun Gram, Jadur Char, Rowmari

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The proposed sub-project involves the improvement of an existing village road through the application of Bituminous Carpeting (BC). The project also includes the rehabilitation, replacement, and construction of drainage structures along the road alignment to facilitate the proper drainage of floodwater and maintain natural water flow. The primary objective of the sub-project is to improve road durability, ensure safe and reliable transportation, and enhance connectivity for the surrounding rural communities. The road improvement works will involve site preparation, earthworks, subgrade and base preparation, and the application of bituminous carpeting. These activities will be carried out largely within the existing road corridor to the maximum extent it is possible to improve riding quality and ensure all-weather accessibility. The sub-project includes the rehabilitation or repair of a damaged Slab Culvert measuring 10 m × 4.3 m at Chainage (Ch.) 0+00 to 1+000 m. 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 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 3000 sqm.

Important Environmental and Social Features near site:

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

Table: Detailed Chainage length of the Sub-Project:

Chainage	Orientation	Social/Economic/Cultural/Environmental Features

	(Left/Right)		(With distance from the centerline of the road)
00-300	L		Local Homes, Agricultural land.
		R	Local Homes, Agricultural land, Pond
300-600	L		Mosque, local homes, pond, agricultural land (338m)
		R	Agricultural land, ponds, local homes, and trees
600-900	L		Local homes, agricultural land, pond
		R	Local homes, agricultural land
900-1000	L		Local homes and trees
		R	Local homes and trees



Starting Point of Jadur char Natungram Ghat Road to Dhanarchar

Overall Comments

D&SC conducted consultation meeting with community regarding the sub-project activities. Local people of the subproject area are very optimistic about the success of the project and are also eager to participate in the project activities. The local individuals participated in the public consultation meeting enthusiastically. Local communities have no objection to construction this sub-project. The community also appreciated the initiative for having easy access to flood shelter during emergencies. 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 has been observed in the road area. But some local trees like mango, rain trees etc. and bamboo bushes, or additional vegetation may need to be cleared due to construction activities, with appropriate offsetting measures to be taken. No agricultural

productive soil will be used for this purpose. Soil will be compacted for stabilization. The inputs will be mainly required at construction phase and limited within project boundary. Mitigation measures will be taken according to the ESMP to minimize the air, dust and noise pollution. Furthermore, it was observed that no social issue will occur for which mitigation measures will be required,

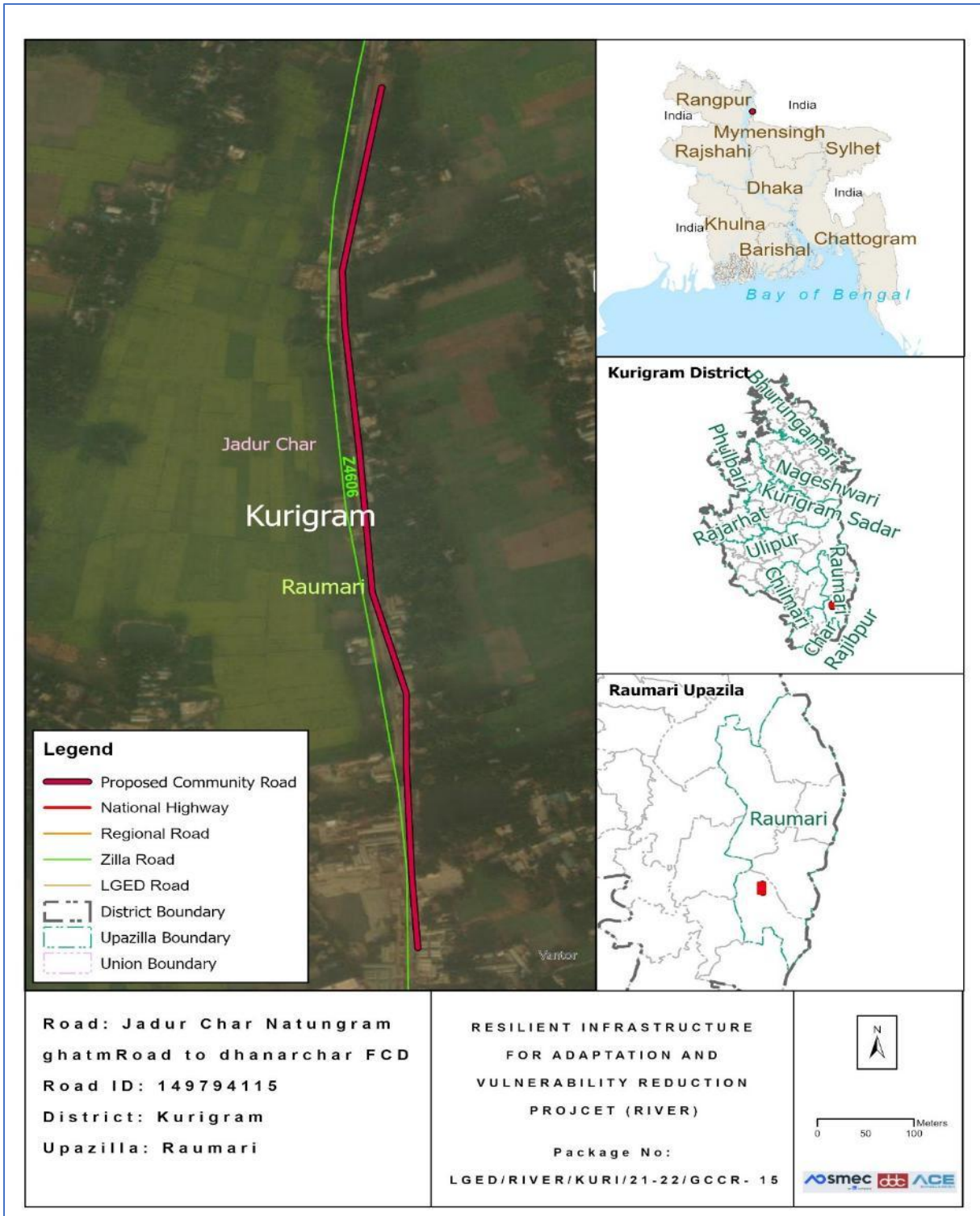
The scope of works of the sub-project does not intend to overtake their area of lodgment and funding entity as well as executing agency has no intention of doing so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included 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 have 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, no loss of livelihoods will occur due to the construction of the sub project.

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 waste are brick pit, unused sand, wood, gravels, bitumen etc. Negligible amounts of plastic, fuel etc. in equipment yards. Human waste might be deposited in labor camps' specific bins.

Sensitive environmental, cultural, archaeological, religious sites near (within 1km) to sites and remaining forests:

No historical or archaeological site was identified within the direct influence area of the proposed sub-project. The sub-project is located within Jadur Notun Gram, Jadur Cahr under Judur Char Union, Ward No. 01 of Rowmari Upazila in Kurigram District. Several environmentally and socially sensitive establishments, including educational and religious institutions, are located within the proximity of 1 km of the project area. Along the left side of the road alignment, these include ponds, homesteads, and agricultural land within approximately 00.000m – 1000m of the project site. Along the right side of the alignment, homesteads, mosque and agricultural land, ponds are located within approximately 1000 m, However, as the proposed sub-project activities will be carried out primarily within the existing road alignment, no significant disturbance or adverse impacts on these nearby residences, agricultural land and ponds are anticipated. Environmentally appropriate precautionary and environmental management measures will be implemented during the construction phase to ensure the protection of these locations.



Location Map of the proposed Community Road

Completed environmental and social screening forms are given below:

Section A: Sub-Project Overview

Description of sub-project/component interventions:

The sub-project is classified as a **village road**. Based on the field survey, this sub-project involves the rehabilitation of damaged sections through **Bituminous Carpeting (BC)**. According to the project design, the road will be upgraded with **Bituminous Carpeting (BC)** along with the entire alignment from **Chainage 0 0m to Chainage 1000 m**.

Sub-project Location:

Important Features	
ID	149794115
District	Kurigram
Upazila	Rowmari
Union	Judur Char
WARD	01
Total Chainage	1000m
Proposed Chainage	1000m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 25.530" N Longitude: 89.814" E
Road Ending Point Coordinates	Latitude: 25.533" N Longitude: 89.812" 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 water bodies, residences etc. and historical or socio-cultural assets): Please also explain any analysis on alternative location conducted:

- i) The proposed Sub-project is located within Jadur Notun Gram, Jadur Cahr under Judur Char Union, Ward No. 01 within one kilometer.
- ii) No historical site was found
- iii) Not required to relocate local community.
- iv) Some trees and vegetation will be affected.
- v) There is almost no 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 features 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 of the road alignment, these include ponds, homesteads, mosque and agricultural land within approximately 00.000m – 1000m of the project site. Along the right side of the alignment, homesteads and agricultural land, ponds are located within approximately 1000 m, however, as the proposed sub-project activities will be carried out primarily within the existing road alignment, no significant disturbance or adverse impacts on the nearby places and residences are anticipated. Nevertheless, appropriate precautionary and environmental management measures will be implemented during the construction phase 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. human settlements 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, rickshwa-vans, 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 is mainly characterized by alluvial, sandy, and silty loam soil formations, which are typical of the northern floodplain region of Bangladesh. The soils in this area generally develops from riverine alluvial deposits and tends to be sandy loam to clay loam in texture. These soils are moderately fertile and widely used for agricultural activities in the surrounding rural areas.

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

Groundwater is the main source of potable water in the Sub-project area. People in the area primarily depend on shallow tube wells for their daily domestic water needs. The average groundwater table is typically found at a depth of approximately 130 to 250 feet below ground level. Groundwater quality assessments indicate the presence of iron, HCO₃⁻¹ ions & arsenic in tube-well water (AHM. Selim Reza & Sudip Saha, University of Rajshahi, December 2020), which may cause health and aesthetic concerns if consumed without treatment. Therefore, appropriate public health measures, including iron removal systems, regular water quality testing, and community awareness programs, are essential to ensure safe drinking water. Local people usually use deep tube-well water for drinking and other domestic purposes. There should be a deep tube well which pump water from the confined aquifer.

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

Status of wildlife movement:

The area supports a variety of common local bird species, frequently observed in surrounding agricultural fields, homesteads, and wetland habitats. Notable species include ghugu, bok, shalik (Common Myna, *Acridotheres tristis*) and Choro (House Sparrow, *Passer domesticus*). These birds play a vital role in controlling insect populations, dispersing seeds, pollinating plants, and maintaining ecological balance within rural landscapes. In addition, the presence of wild mammals, such as Bon Biral (Jungle Cat, *Felis chaus*), snake and Fox (Bengal Fox, *Vulpes bengalensis*), reflects the typical rural biodiversity and ecological integrity of the area. These mammals function as natural predators, helping regulate populations of rodents and other small animals, thereby contributing to agricultural pest control and ecosystem stability.

Overall, the diversity of fish, birds, and mammals in the area indicates a functioning and interconnected ecosystem. Protecting these species through sustainable water management, habitat conservation, and environmentally responsible development is essential for maintaining biodiversity, ecological resilience, and long-term environmental sustainability in the locality.

State of forestation:

Patches of vegetation containing large and matured trees across the roadside of the proposed subproject area are located within 200m radial distance. In some places vegetation is located within 2-3m distance from the road shoulder,

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 for the equipment vehicles to arrive at the proposed location. Nonetheless, heavy four wheelers will not be a suitable option while this may cause more dust in the air, 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 landowner under a mutual agreement, with the supervision of the Engineer in charge.

Requirements and types 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 locations is available. However, this will need placement in open fields and should be consulted with local government organizations and community committee.

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

Earth/ mud, plastics, brick chips, cement dust, dust from bricks, steel wires, during construction which can be identified as solid wastes. Labor sludge will be produced from labor camp latrines and kitchen waste mostly composed of organic matters such as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastic 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 is mostly solid waste. 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 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, there is no possibility 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 existing drainage system has been identified along with the project alignment. However, several natural drainage features, including ponds, ditches, rivers, and palisades, are present along the route. On the left side of the alignment, three ponds are located at approximately 300 m, 544 m, and 1,695 m from the road. On the right side, ponds or palisades are located at distances of approximately 25 m, 10 m, 1,646 m, and 1,695 m from the alignment.
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 did not observe 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 leads 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 soil: (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 mosquito breeding and other disease vectors: (High/Medium/Low with explanation)
There is no possibility of stagnant water bodies remaining 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 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 impact 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 condition.

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: Jadur char Natungram Ghat Road to Dhanarchar

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs - All the safeguard documents will be disclosed to all relevant stakeholders. - People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating dust and noise)	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Sanitation and water supply	- 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. - Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	- Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times. - Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. - Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. - Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	- All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. - Construction facilities including materials are to be placed at least 10m distance from any	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		water body in order to minimize the impacts on water bodies and natural water flow. • Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage.		
Construction Activity	Noise from construction works	• Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works.		
Construction Activity	Dust	- Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. - Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. - Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. - Construction materials should be covered properly while carrying in vehicles to the site.	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	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	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		yards, and maintaining a visitor's log book at entrance) • Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. • Records of every training must be kept at site. • All kinds of Child labour are completely prohibited in every site. • Every construction materials storage site will be well fenced by Tin and safety caution tape.		
Construction Activity	Traffic Management	• Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. • Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. • Local traffic police department should be contacted, if traffic problem becomes more complex.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Increase in road accidents	• Maintain safety measures during the movement of heavy machinery and equipment. • Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness.	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	• Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place.	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Treated water will be made available at site for drinking purpose. - Adequate accommodation arrangements for labor forces. - Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Labour related issues and grievances	- A separate grievance mechanism for workers has to be established for the work package. - Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. - Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site. - The construction debris material generated from the erection of structures and demolition	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. • Refueling areas and other fluid transfer areas will be imperviously paved. • Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. • Applicability of the Hazardous Waste Management Rules.		
Construction Activity	Health & Safety Risks: • The potential for exposure to safety events such as tripping, working at height activities, fire from hot works,	• All construction equipment will be properly inspected timely. • The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. • Provide walkways that are clearly designated as a walkway; all walkways shall be provided	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
	smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	with good conditions underfoot; signposted and with adequate lighting. - Proper Signpost at any slippery areas will be ensured in construction site. - Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site.		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Adequate quantities of drinking water will be available at all Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	- Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) - The material stockpile sites shall be far away from surface water bodies and areas prone to	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.		
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage: Pollution from waste materials.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - Ensure that all affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. - Disposal of faecal sludge from latrines is to be undertaken properly, if management on site	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	Health & Safety risks to workers and local community.	becomes problematic; - All imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. - The contractor must arrange the cancellation of all temporary services.		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time.	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	- The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. - Contractor shall submit regular monthly	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.		
Operation & Maintenance	Road Safety. Impacts include: - The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers. - Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries.	Road safety issues can be minimized in following ways: - By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. - Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. Road signage and speed breaker for School (1+279) and road signage for graveyard (0+758) shall be installed/constructed. - All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.	UE (Upazila Engineer)	District Executive Engineer, LGED
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures.	Upazila Engineer	District XEN, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.		

Cost of Environmental and Social Enhancement Works in BOQ

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

Cost of Environmental Enhancement Works in BOQ

Sl. no.	Description of item	Quantity	Unit price	Total amount
1.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	1200 Sq.m	@ BDT 38.15 Per sqm	45,780.00
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	1000.0m	@ BDT 2.56	2,560.00
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@ BDT 12822.86	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying	1 no.	BDT 5000.00 Per box	5,000.00

Sl. no.	Description of item	Quantity	Unit price	Total amount
	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.	<u>Drinking Water Facilities</u> 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.	1 no.	BDT 30,000.00	30,000.00
6.	<u>Traffic Management</u> 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.	1 no.	BDT 15,000.00	15,000.00
7.	<u>Personal Protection Equipment for Workers</u> 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,	LS	BDT 30,000.00	30,000.00

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report of Community Roads for Kurigram District (GCCR-15)

Sl. no.	Description of item	Quantity	Unit price	Total amount
	ear muffs etc. (v) suitable eye protection goggles			
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	BDT 10,000.00	10,000.00
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	BDT 5000.00	5,000.00
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	BDT 5000.00	5,000.00
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	BDT 30,000.00	30,000.00
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. [One person to be appointed for 19 roads]	LS	BDT 35000.00	35,000.00
	Total amount for this Road			238,985.72



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for Chaktabari- Thanthonia para via Koraikandi **Road ID:** 149795006

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

District: Kurigram

Upazila: Rowmari

Union: Rowmari

Name of Community/Local Area Kodaikandi, Daskhinpara, Rowmari

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The Sub-Project is categorized as a village road improvement with bituminous carpeting options. For ensuring proper drainage and maintaining hydraulic connectivity along the alignment, several cross-drainage and ancillary structures have been incorporated in the design. These include 1 no. RCC bridge (dimension: 4.3 m × 6.0 m) at Ch. 1+130, 1 no. slab culvert (dimension: 2.0 m × 6.5 m) at Ch. 0+819, 1 no. brick box culvert (dimension: 4.3 m × 5.0 m) at Ch. 0+284, and 1 no. rail-opening structure (dimension: 1.0 m × 7.0 m) at Ch. 0+171. In addition, 1 no. brick drain (dimension: 2.0 m × 2.0 m) at Ch. 0+047 has been included to facilitate local surface runoff and maintain roadside drainage conditions. These structures are designed to ensure unobstructed flow of water through existing canals and natural drainage paths, particularly during the monsoon season, thereby preventing waterlogging and protecting the road embankment. 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.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 2600m. Detail Environmental features within 100m of 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		Local homes and pond
		R	Madrasah, local homes, and pond
300-600	L		Local homes and pond
		R	Local homes and pond
600-900	L		Local homes and pond
		R	Local homes and trees
900-1200	L		Agricultural land, local homes

Chainage	Left	Right	Environmental and Social Impact
		R	Agricultural land, local homes
1200-1500	L		Local homes, pond, trees
		R	Madrasah, local homes
1500-1800	L		Local homes, pond
		R	Madrasah, local homes, pond (1520m)
1800-2100	L		Local homes, pond, and agricultural land.
		R	Mosque, local homes, pond (2095m)
2100-2400	L		Agricultural land, local homes, pond
		R	Agricultural land, local homes, pond
2400-2600	L		Agricultural land, local homes, pond
		R	Agricultural land, local homes, pond



Starting Point of Chaktabari- Thanthonia para via Koraikandi

Overall Comments

D&SC conducted consultation meeting with community regarding the sub-project activities. Local people of the subproject area are very optimistic about the success of the project and are also eager to participate in the project activities. The local individuals participated in participatory public consultation meetings. 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 has been observed in the road area. But some local trees like betel nuts, rain trees etc., or additional vegetation may need to be cleared due to construction activities, with appropriate offsetting measures to be taken. No agricultural productive soil will be used for this 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.

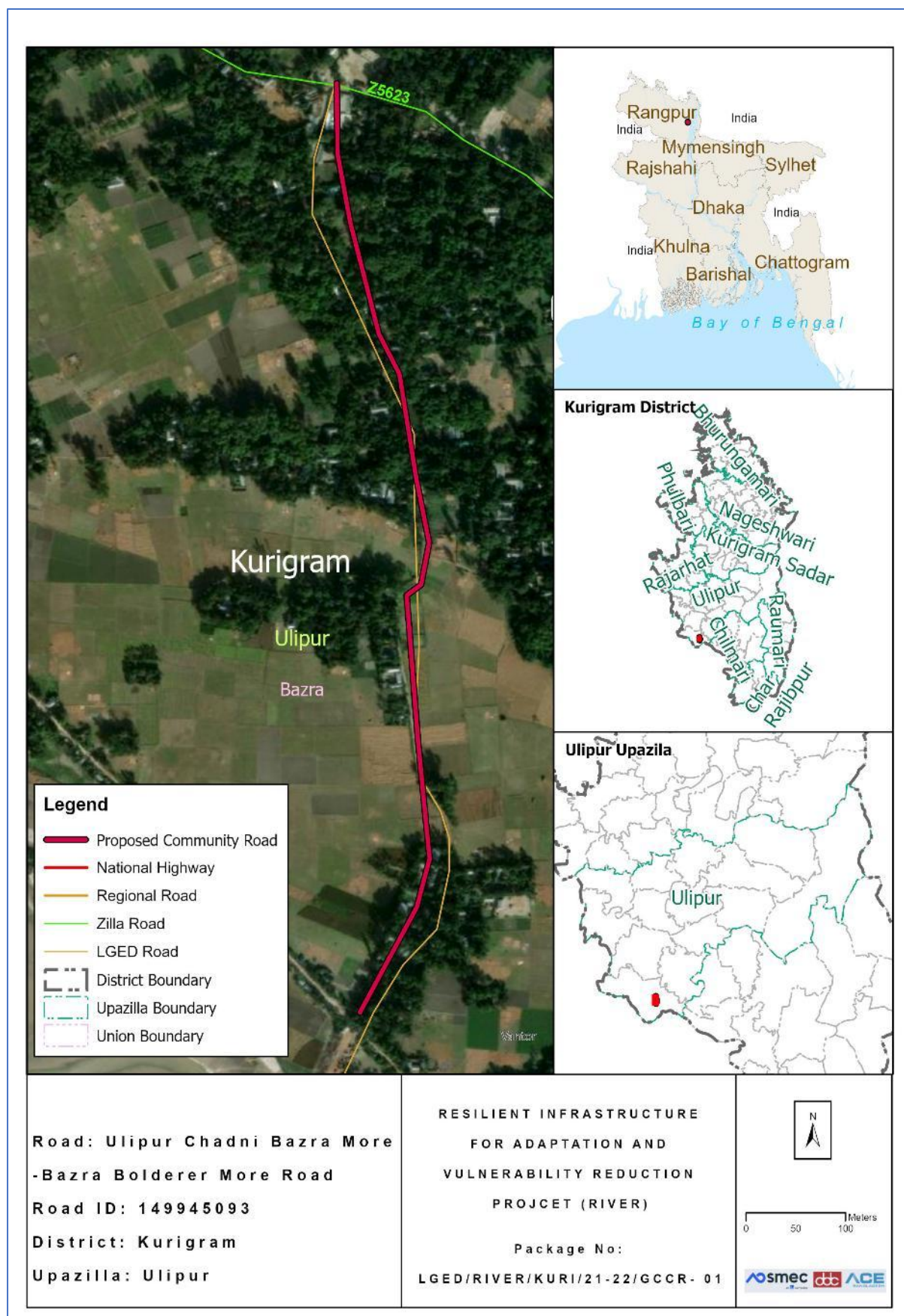
It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention of doing so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation 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 have 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 waste are brick pit, unused sand, wood, gravels, bitumen etc. Negligible amounts of plastic, fuel etc. in equipment yards. Human waste might be deposited in labor camps.

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

Within the influence area of the sub-project, no historical sites were identified. This sub-project is situated within the alignment covering several chainages along the project corridor. Starting from 00-300m, the left side has local homes and a pond, while the right side has a madrasah, local homes, and a pond. From 300-600m, both sides of the road have local homes and a pond. Between 600-900m, the left side features local homes and a pond, and the right side has local homes and trees. In the 900-1200m section, the left side has agricultural land and local homes, and the right side is similar with agricultural land and local homes. The stretch from 1200-1500m includes local homes, a pond, and trees on the left, and a madrasah and local homes on the right. From 1500-1800m, the left side contains local homes and a pond, while the right side features a madrasah, local homes, and a pond at around 1520m. Between 1800-2100m, the left side has local homes, a pond, and agricultural land, and the right side includes a mosque, local homes, and a pond at approximately 2095m. The 2100-2400m stretch has agricultural land, local homes, and a pond on the left, and agricultural land, local homes, and a pond on the right. Finally, 2400-2600m has agricultural land, local homes, and a pond on the left, with similar features on the right.



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 involves of Brick Flat Soiling (BFS) and earthen. According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 00 to Ch. 2600m.

Sub-project Location:

Important Features	
ID	149795006
District	Kurigram
Upazila	Roumari
Union	Roumari
Total Chainage	2600m
Proposed Chainage	2600m
Road Type	Village Road-B
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 25.540 N Longitude: 89.812 E
Road Ending Point Coordinates	Latitude: 25.533 N Longitude: 89.812 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 Kodaikandi, Daskhinpara, Rowmari 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. Starting from 00-300m, the left side has local homes and a pond, while the right side has a madrasah, local homes, and a pond. From 300-600m, both sides of the road have local homes and a pond. Between 600-900m, the left side features local homes and a pond, and the right side has local homes and trees. In the 900-1200m section, the left side has agricultural land and local homes, and the right side is similar with agricultural land and local homes. The stretch from 1200-1500m includes local homes, a pond, and trees on the left, and a madrasah and local homes on the right. From 1500-1800m, the left side contains local homes and a pond, while the right side features a madrasah, local homes, and a pond at around 1520m. Between 1800-2100m, the left side has local homes, a pond, and agricultural land, and the right side includes a mosque, local homes, and a pond at approximately 2095m. The 2100-2400m stretch has agricultural land, local homes, and a pond on the left, and agricultural land, local homes, and a pond on the right. Finally, 2400-2600m has agricultural land, local homes, and a pond on the left, with similar features on the right.

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 is located mainly in red, alluvial, muddy, sandy soil formation. The soils developing from the weathered sandstones tend to be sandy to clay loams.

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

Groundwater is the main source of potable water in the Sub-project area. The shallow depth is about 200 feet and deep tubewell depth is 800 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Water from the shallower aquifers beneath the Sub-project area contains high concentration of iron. Deep groundwater table (drinkable) varies from 600-800ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

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

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

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

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 pre - existing drainage channel is found.
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: Chaktabari- Thanthonia para via Koraikandi (149795006)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	- No land acquisition is allowed in or nearby areas of the sub-project, or for any sub-project related activities. Therefore, no mitigation measures are suggested in this respect. - If and whenever any land/physical assets related grievances are raised at any point of the subproject implementation, project GRCs will take due course of actions to resolve the issues or grievances.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of livelihood	- Under this subproject, there is no scope of negative impact on the livelihoods of adjacent communities or people. - Contractors will be encouraged to engage local labors (both skilled and unskilled) as priority at their construction works, and women labor would get higher priority in recruitment.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs - All the safeguard documents will be disclosed to all relevant stakeholders.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.		
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating dust and noise)	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Sanitation and water supply	- Sanitation facilities (male and female toilets, wash-basins, etc.) for workers and constructor's officials/employees will be provided. - Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.	Contractor	Environmental Consultant of PIU
Pre-Construction	Site Selection for workers camps, stack yards &	Workers camp, site office and stack yard should be located at a site favorable for the workers and	Contractor	Environmental Consultant of

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Stage	implementing interventions: Generation of ESHS issues.	proposed by the contractor & approved by the Environmental Specialist of D&SC. • No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. • Construction of sanitary latrine with septic tank for both male and female workers and staffs; and ensure regular cleaning of those. • Provision of waste bins/ cans, where appropriate, • Litter is to be collected daily. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • 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.		PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		for avoiding any accidental events from those. - Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. - Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage; removal/relocation of utility services	- All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. - Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow. - Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. - After completing the development, the site shall be restored as before. - This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place.	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Sub project intervention must avoid natural disturbance to existing slop and natural drainage. - Existing utility services must be relocated or adjusted where they obstruct the works or pose a risk of damage, in close cooperation with the appropriate authority. - The contractor must ensure sound environment for the local residents near the sub project site.		
Construction Activity	Noise from construction works	- Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. - All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. - Noise producing vehicles and equipment will be keep in maintenance regularly. - Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works.	Contractor	Environmental Consultant of PIU
Construction Activity	Dust	Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter),	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. - Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. - Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. - Construction materials should be covered properly while carrying in vehicles to the site.		
Construction Activity	Safety Issues	- Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance) - Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. - Records of every training must be kept at site. - All kinds of Child labour are completely prohibited in every site. - Every construction materials storage site will be well fenced by Tin and safety caution tape.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Traffic Management	- Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. - Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. - Local traffic police department should be contacted, if traffic problem becomes more complex.	Contractor	Environmental Consultant of PIU
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- Water sources (e.g., ground or surface water) for construction works will be determined in consultation with the local DPHE office, considering the availability of nearby resources and technical options, and potential risks of extracting water from the same sources used by other consumer groups especially during the critical period. - Water from any installed tubewell or an existing surface water bodies within the nearby places will be used for construction works, if the available water quality satisfies the required standards for construction works.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority need to be taken before extraction or setting up bore wells. • Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. • Local community must be consulted before any construction works start.		
Construction Activity	Increase in road accidents	• Maintain safety measures during the movement of heavy machinery and equipment. • Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness.	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	• 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	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Labour related issues and grievances	• A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		
Construction Activity	Waste Management: Improper management	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
	and handling of hazardous and non-hazardous waste during construction.	- Waste from the temporary accommodation facilities for labor - Waste from equipment maintenance/vehicles on-site. - The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e. chemical, oil, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. - Refueling areas and other fluid transfer areas will be imperviously paved. - Workers will be trained on the correct transfer and handling of fuels and chemicals and the response		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. • Applicability of the Hazardous Waste Management Rules.		
Construction Activity	Slipping of soil masses, dust deposition, draining or spillage of chemicals/contaminants, etc. to nearby water bodies	• Slope protection measures (proper compaction, palisading or protection walls, etc.) will be taken before starting work at any sensitive section of the road. • Dust suppression measures and material storage and handling procedure have to be undertaken with proper care and vigilance to avoid or minimize the impacts.	Contractor	Environmental and Social Development Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: • The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. • Exposure to health	• All construction equipment will be properly inspected timely. • The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. • Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. • Proper Signpost at any slippery areas will be ensured in construction site.	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	• Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. • This sub project will have Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. • All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. • Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. • All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		stroke, and dehydration. Written records of this awareness training shall be kept on site. • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. • Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	• Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered.	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. - All precautions to store chemicals/oil/fuel properly so that no chance of spill. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.		
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage: Pollution from waste materials.	Provision to proper measures of mitigation and monitoring to minimize or reduce the environmental and social impacts during demobilization, which are anticipated to be similar to those identified for the construction phase. Some of the measures include: (i)remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; (ii) ensure that all affected structures rehabilitated/compensated; (iii) the area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. Disposal	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	Health & Safety risks to workers and local community.	- of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; (iv) all imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. - The contractor must arrange the cancellation of all temporary services.		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Solid organic wastes should be stored in bins and/or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time.	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.		
Operation & Maintenance	Road Safety. Impacts include: - The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers. - Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries.	Road safety issues can be minimized in following ways: - By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. - Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. - All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.	UE (Upazila Engineer)	District Executive Engineer, LGED
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	UE	District 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.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	3120. Sq.m	@38.15 Tk. Per sqm	119,028.00
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	2600m	@ 2.56 BDT	6,656.00
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and	1 no.	LS @5000 Tk. Per box	5,000

SI no.	Description of item	Quantity	Unit price	Total amount
	full satisfaction of Engineer-in-charge.			
5.	<u>Drinking Water Facilities</u> 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.	1 no.	LS @ Tk. 30,000	30,000
6.	<u>Traffic Management</u> 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.	1 no.	LS @ Tk. 15,000	15,000
7.	<u>Personal Protection Equipment for Workers</u> 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	LS	LS @ Tk. 30,000	30,000
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000

SI no.	Description of item	Quantity	Unit price	Total amount
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS Tk. 30,000	30,000
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. [One person to be appointed for 19 roads]	Each	@ Tk. 35000	35,000
Total amount for this Road				316,329.72



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for Amertal - Sukdev Road **Road ID:** 149774050

Name of Sub-Project: Improvement of Community Road for Amertal - Sukdev Road **Road ID:** 149774050

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

District: Kurigram

Upazila: Rajarhat

Union: Chakirposhar

Name of Community/Local Area: Boddidar Chara, Daspara, Sukdeb, Chakirposhar

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

The Sub-Project is categorized as a village road and construction with Bituminous Carpeting options. For drainage of rain water Pipe Culvert- (Ch. 600m), Box Culverts (Ch. 890m, U-Drain (Ch. 961m), and U Drain Ch. 1198m), RCC Cross the drain. (Ch. 622), Palisading Ch. 120-145 RS, Ch. 152-165 RS and Ch. 865-890 RS has been included in the estimation as well as for road safety work and Environmental Mitigation work has been included in the estimation.

Estimated footprint / land area for this sub-project is 3900 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 1300m. 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
"0" Point 000-300	L		Human settlement, agricultural land, and a pond.
		R	Fishpond, human settlement, agricultural land
300-600	L		Mosque, human settlement, agricultural land.
		R	Ditches, agriculture land, and human settlement.
600-900	L		Agricultural land.
		R	Human settlement, agriculture land.
900-1200	L		Fishpond, pond, agriculture land.
		R	Human settlement and pond.
1200-1300	L		Hat Bazar Shop, and human settlement.

Chainage	Left	Right	Environmental and Social Impact
		R	Agricultural land



Starting Point of Amertal - Sukdev 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

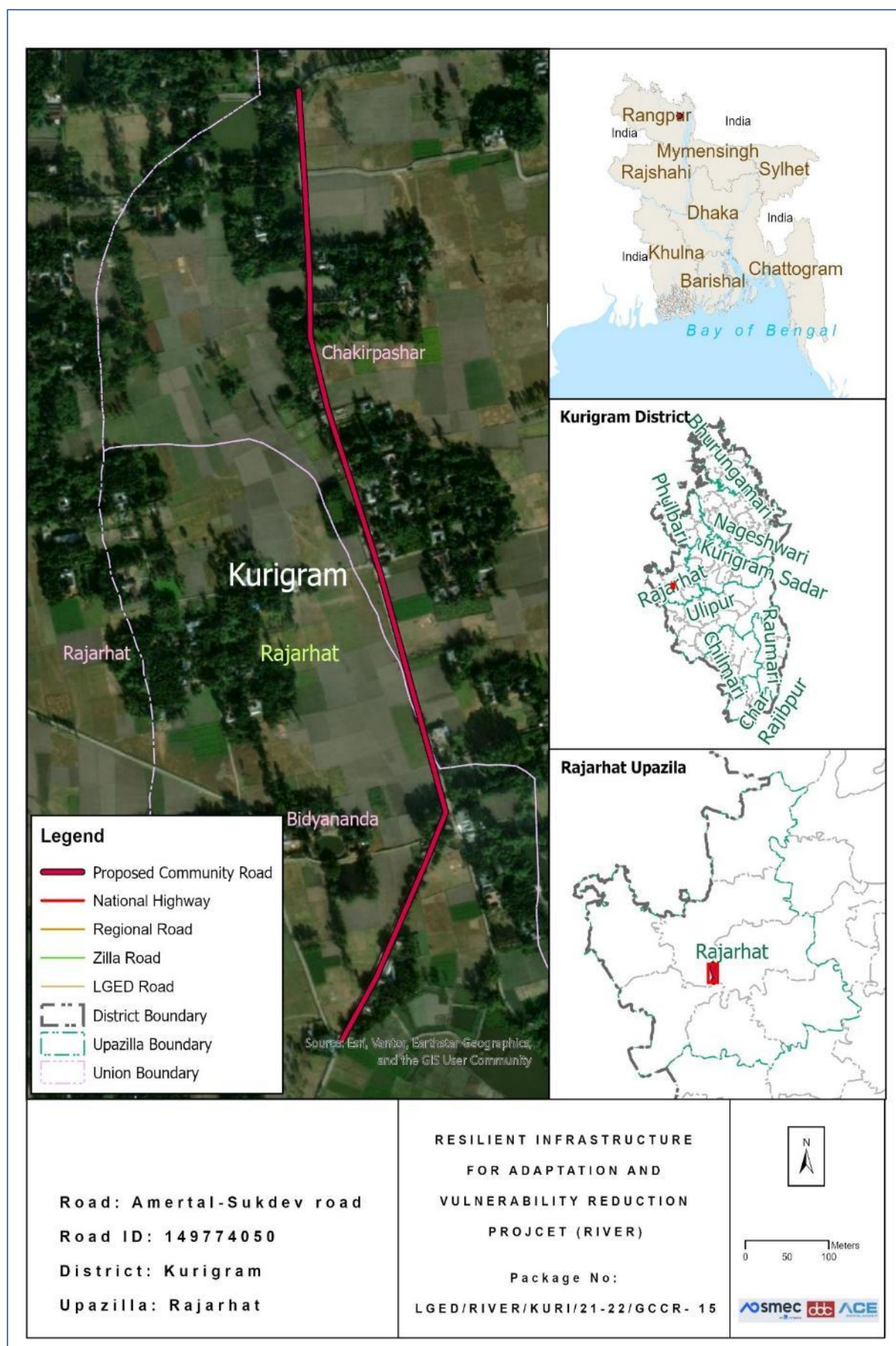
environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub 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:

Within the influence area of the subproject no historical sites were identified. The 00-300m section on the left side features human settlement, agricultural land, and a pond, while the right side has a fishpond, human settlement, and agricultural land. Between 300-600m, the left side includes a mosque, human settlement, and agricultural land, and the right side contains ditches, agricultural land, and human settlement. The 600-900m stretch is characterized by agricultural land on the left and human settlement with agricultural land on the right. From 900-1200m, the left side includes a fishpond, pond, and agricultural land, while the right side has human settlement and a pond. The 1200-1300m section features a hat bazar shop and human settlement on the left, with agricultural land on the right.



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 involves of Brick Flat Soiling (BFS) and earthen. According to the design this sub-project will be developed with Bituminous Carpeting (Damaged) from Ch. 00 to Ch. 1300m.

Sub-project Location:

Important Features	
ID	149774050
District	Kurigram
Upazila	Rajarhat
Union	Chakirposhar
Total Chainage	1300m
Proposed Chainage	1300m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	25.777383 N 89.536645 E
Road Ending Point Coordinates	25.760522 N 89.536645 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 Boddidir Chara, Daspara, Sukdeb, and Chakirposhar.
 - 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 features 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) including elephant migration routes and remaining forests:

No sensitive environmental, cultural, archaeological, or religious sites were observed within the vicinity of the sub-project area. The 00-300m section on the left side features human settlement, agricultural land, and a pond, while the right side has a fishpond, human settlement, and agricultural land. Between 300-600m, the left side includes a mosque, human settlement, and agricultural land, and the right side contains ditches, agricultural land, and human settlement. The 600-900m stretch is characterized by agricultural land on the left and human settlement with agricultural land on the right. From 900-1200m, the left side includes a fishpond, pond, and agricultural land, while the right side has human settlement and a pond. The 1200-1300m section features a hat bazar shop and human settlement on the left, with agricultural land on the right.

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 is located mainly in red, alluvial, muddy, sandy soil formation. The soils developing from the weathered sandstones tend to be sandy to clay loams.

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

Groundwater is the main source of potable water in the Sub-project area. The shallow depth is about 50 feet and deep tubewell depth is 120 feet. But the shallow tube well is not

working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Water from the shallower aquifers beneath the Sub-project area contains high concentration of iron. Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC - 25.7 to 681 μ s/cm, Fe-0.5 to 7.0 mg/l and As-Nil (Field Study Report, January 2026)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

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 pre - existing drainage channel is found.

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 did not observe 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 leads to low scale effects of landslides. 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 mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

There is no possibility of stagnant water bodies remaining 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 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: Amertal - Sukdev Road

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs - All the safeguard documents will be disclosed to all relevant stakeholders. - People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating dust and noise)	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Sanitation and water supply	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.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.		
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	- Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times. - Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. - Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. - Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	- All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. - Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow. - Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. - After completing the development, the site shall be restored as before. - This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place.	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Sub project intervention must avoid natural disturbance to existing slop and natural drainage.		
Construction Activity	Noise from construction works	- Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. - All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. - Noise producing vehicles and equipment will be keep in maintenance regularly. - Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works.	Contractor	Environmental Consultant of PIU
Construction Activity	Dust	- Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. - Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. - Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Construction materials should be covered properly while carrying in vehicles to the site.		
Construction Activity	Safety Issues	- Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance) - Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. - Records of every training must be kept at site. - All kinds of Child labour are completely prohibited in every site. - Every construction materials storage site will be well fenced by Tin and safety caution tape.	Contractor	Environmental Consultant of PIU
Construction Activity	Traffic Management	- Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. - Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. - Local traffic police department should be contacted, if traffic problem becomes more complex.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Increase in road accidents	• Maintain safety measures during the movement of heavy machinery and equipment. • Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness.	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	• Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation.	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Labour related issues and grievances	- A separate grievance mechanism for workers has to be established for the work package. - Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. - Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site. - The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. - Refueling areas and other fluid transfer areas will be imperviously paved.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. - Applicability of the Hazardous Waste Management Rules.		
Construction Activity	Health & Safety Risks: - The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. - Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. - Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. - Proper Signpost at any slippery areas will be ensured in construction site. - Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - 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.	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.	- All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. - Adequate quantities of drinking water will be available at all Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	- Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.		
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage: Pollution from waste materials.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - Ensure that all affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. - Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic;	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	Health & Safety risks to workers and local community.	- All imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. - The contractor must arrange the cancellation of all temporary services.		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time.	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	- The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. - Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.	Contractor	Environmental Consultant of PIU
Operation & Maintenance	Road Safety. Impacts include:	Road safety issues can be minimized in following ways: By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety.	UE (Upazila Engineer)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	- The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers. - Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries.	- 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. - All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	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.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	1560 Sq.m	@38.15 Tk. Per sqm	59,514.00
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	1300.0 m	@ 2.56 BDT	3,328.00
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain	1 no.	LS @5000 Tk. Per box	5,000

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.	<u>Drinking Water Facilities</u> 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.	1 no.	LS @ Tk. 30,000	30,000
6.	<u>Traffic Management</u> 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.	1 no.	LS @ Tk. 15,000	15,000
7.	<u>Personal Protection Equipment for Workers</u> 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	LS	LS @ Tk 30,000	30,000
8.	<u>Motivation training</u>	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.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. <u>[One person to be appointed for 19 roads]</u>	Each	@ Tk. 35000	35,000
	Total amount for this road			253,487.72



Figure: Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for **Tograihat - Rajarhat UP (Shahed Bazar) via Taltola Mondolpara; Road ID:** 149774025

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

District: Kurigram; **Upazila:** Rajarhat; **Union:** Rajarhat

Name of Community/Local Area: Shahed Bazar, Mondolpara

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The proposed sub-project involves the improvement of an existing village road through **Bituminous Carpeting (BC)** and, for the drainage of floodwater, the replacement, construction, or renovation of several damaged bridges and a culvert along the road alignment. The objective of the project is to enhance road durability, ensure safe and reliable transportation, and improve connectivity for the surrounding rural communities. The road improvement works will include site preparation, earthwork, subgrade and base preparation, and the application of bituminous carpeting within the existing road corridor to the greatest extent possible, which will improve riding quality and provide all-weather accessibility. Additionally, the road requires Palisading -(Ch. 669m), Culvert U drain (Ch. 4+597) to ensure stability and prevent erosion. 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 3420 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 00m to 1140m. 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		Chainage_ 4132-4173 (Fishpond) distance from center line 1.8 m.
		R	Agricultural land
300-600	L		Chainage_ 4360-4375 (Fishpond) distance from center line 1.85 m.

Chainage	(Left/Right)		Environmental and Social Impact
		R	Chainage_ 4350-4380 (Fishpond) distance from center line 1.90 m.
600-900	L		Agricultural land
		R	Agricultural land
900-1140	L		Chainage_ 5075-5135m (Fishpond) distance from center line 1.60 m.
		R	Agricultural land



Starting Point of Tograihat - Rajarhat UP (Shahed Bazar) via Taltola Mondolpara.

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.

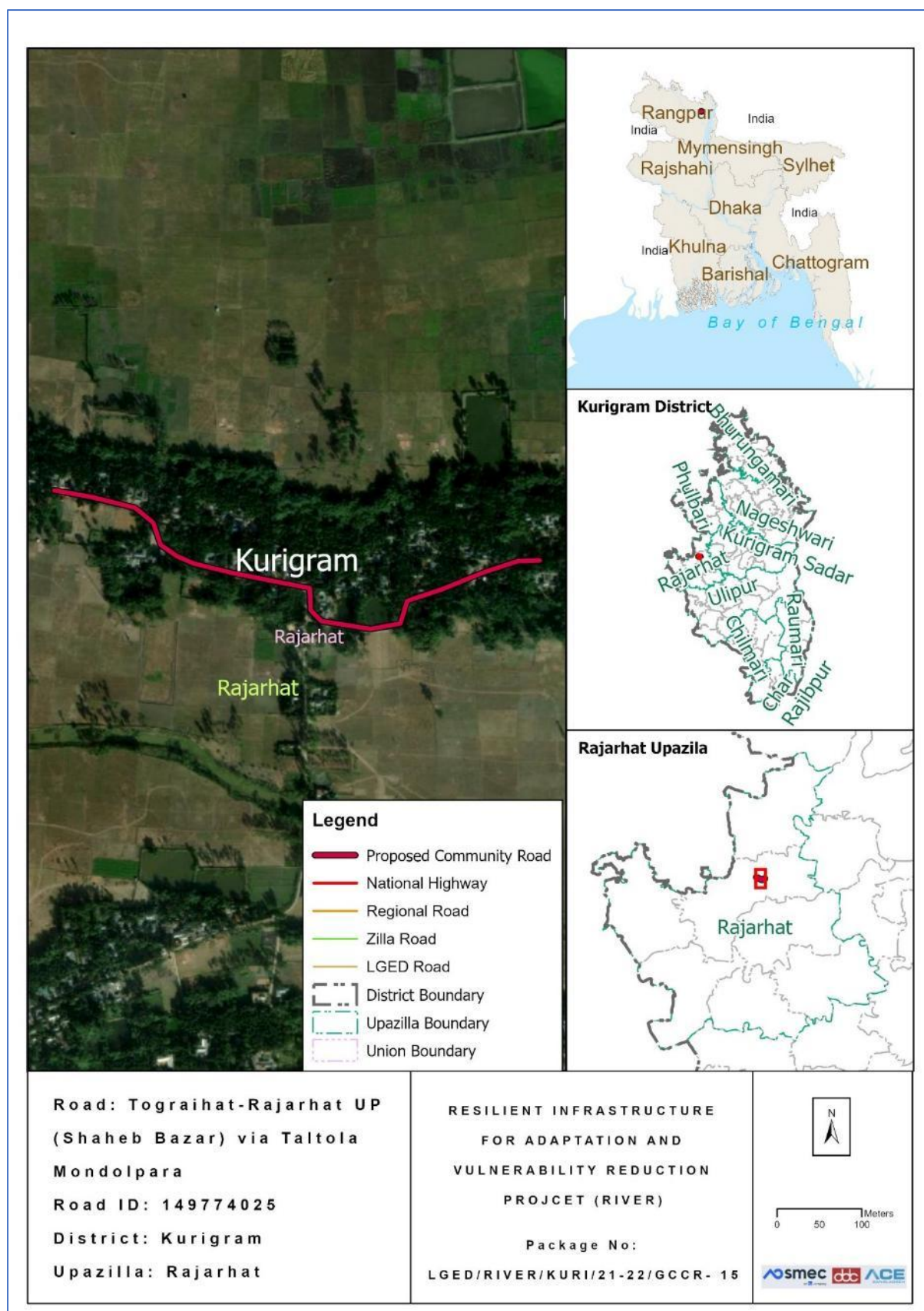
It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation 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 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. Additional features include shops, fishponds 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 classified as a **village road**. Based on the field survey, this sub-project involves the rehabilitation of damaged sections through **Bituminous Carpeting (BC)**. According to the project design, the road will be upgraded with **Bituminous Carpeting (BC)** along the entire alignment from **Chainage 0 m to Chainage 1140 m**.

Sub-project Location:

Important Features	
ID	149774025
District	Kurigram
Upazila	Rajarhat
Union	Rajarhat
Total Chainage	1140m
Proposed Chainage	1140m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	25.813958 N 89.555281 E
Road Ending Point Coordinates	25.815385 N 89.546336 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 Shahed Bazar and Mondolpara.
- 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:

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. Additional features include shops, fishponds 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 is mainly characterized by **alluvial, sandy, and silty loam soil formations**, which are typical of the northern floodplain region of Bangladesh. The soils in this area generally develop from riverine alluvial deposits and tend to be **sandy loam to**

clay loam in texture. These soils are moderately fertile and widely used for agricultural activities in the surrounding rural areas.

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

Groundwater is the main source of potable water in the Sub-project area. People in the area primarily depend on shallow tube wells for their daily domestic water needs. The average groundwater table is typically found at a depth of approximately 130 to 250 feet below ground level. Groundwater quality assessments indicate the presence of iron & arsenic in tube-well water, which may cause health and aesthetic concerns if consumed without treatment. Therefore, appropriate public health measures, including iron removal systems, regular water quality testing, and community awareness programs, are essential to ensure safe drinking water. Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

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

Status of wildlife movement:

The area supports a variety of common local bird species, frequently observed in surrounding agricultural fields, homesteads, and wetland habitats. Notable species include ghugu, bok and Choro (House Sparrow, *Passer domesticus*). These birds play a vital role in controlling insect populations, dispersing seeds, pollinating plants, and maintaining ecological balance within rural landscapes. In addition, the presence of wild mammals, such as Bon Biral (Jungle Cat, *Felis chaus*), snake and Fox (Bengal Fox, *Vulpes bengalensis*), reflects the typical rural biodiversity and ecological integrity of the area. These mammals function as natural predators, helping regulate populations of rodents and other small animals, thereby contributing to agricultural pest control and ecosystem stability. Overall, the diversity of fish, birds, and mammals in the area indicates a functioning and interconnected ecosystem. Protecting these species through sustainable water management, habitat conservation, and environmentally responsible development is essential for maintaining biodiversity, ecological resilience, 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 existing drainage system has been identified along the project alignment. However, several natural drainage features, including ditches, rivers, and palisades, are present along the route. On the left side of the alignment, ditches or palisades are observed at Chainage 480–505 m, Chainage 800 m, and Chainage 2945 m, while river crossings occur at Chainage 1435 m and Chainage 1700 m. On the right side of the alignment, a ditch or palisade is located at Chainage 1756 m.

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: Tograihat - Rajarhat UP (Shahed Bazar) via Taltola Mondolpara

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs - All the safeguard documents will be disclosed to all relevant stakeholders. - People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating dust and noise)	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Sanitation and water supply	- 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. - Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	- Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	• All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. • Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow.	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage.		
Construction Activity	Noise from construction works	• Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Dust	- Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. - Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. - Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. - Construction materials should be covered properly while carrying in vehicles to the site.	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	- Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance) - Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. - Records of every training must be kept at site. - All kinds of Child labour are completely prohibited in every site.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Every construction materials storage site will be well fenced by Tin and safety caution tape.		
Construction Activity	Traffic Management	- Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. - Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. - Local traffic police department should be contacted, if traffic problem becomes more complex.	Contractor	Environmental Consultant of PIU
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement of heavy machinery and equipment. - Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. - Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) - Local community will be trained up on traffic management and awareness.	Contractor	Environmental Consultant of PIU
Construction	Labor Base Camp:	Awareness building session will be undertaken	Contractor	Social

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Activity	Conflicts with the local residents	about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation.		Development Specialist and Gender Specialist of PIU
Construction Activity	Labour related issues and grievances	• A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		of the work. All new workers recruited at different times/phases will be oriented about the same.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: • Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. • Refueling areas and other fluid transfer areas will be imperviously paved. • Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. • Applicability of the Hazardous Waste Management Rules.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Health & Safety Risks: - The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. - Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. - Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. - Proper Signpost at any slippery areas will be ensured in construction site. - Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to	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
		highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. • Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	• Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.)	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.		
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage:	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - Ensure that all affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. - Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic;	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	- Pollution from waste materials. - Health & Safety risks to workers and local community.	- All imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. - The contractor must arrange the cancellation of all temporary services.		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time.	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	- The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. - Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		reporting standard set by the ES Consultants of D&SC/PIU.		
Operation & Maintenance	Road Safety. Impacts include: - The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers. - Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries.	Road safety issues can be minimized in following ways: - By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. - Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. Road signage and speed breaker for School (1+279) and road signage for graveyard (0+758) shall be installed/ constructed. - All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.	UE (Upazila Engineer)	District Executive Engineer, LGED
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for	Upazila Engineer	District XEN, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		the 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.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	1368 Sq.m	@38.15 Tk. Per sqm	52,189.20
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	1140.0m	@ 2.56 BDT	2,918.40
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain	1 no.	LS @5000 Tk. Per box	5,000.00

Sl. no.	Description of item	Quantity	Unit price	Total amount
	necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<u>Drinking Water Facilities</u> 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.	1 no.	LS @ Tk. 30,000	30,000.00
6.	<u>Traffic Management</u> 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.	1 no.	LS @ Tk. 15,000	15,000.00
7.	<u>Personal Protection Equipment for Workers</u> 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	LS	LS @ Tk. 30,000	30,000.00

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report of Community Roads for Kurigram District (GCCR-15)

Sl. no.	Description of item	Quantity	Unit price	Total amount
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000.00
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000.00
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000.00
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000.00
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. [One person to be appointed for 19 roads]	Each	@ Tk. 35000	35000.00
	Subtotal Bill: Environmental and Social facilities			245,753.32



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road **Taltola Pucca road -Dinor bazar via Kalirpat, Road ID: 149775048**

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

District: Kurigram **Upazila:** Rajarhat **Union:** Chakirposhar

Name of Community/Local Area: Chatmadhai, Dudkhaoya, Bajemujrai

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The Sub-Project is categorized as a union road and construction with Bituminous Carpeting options. For proper drainage of floodwater along the project alignment, one culvert at chainage 2064 m will be constructed as required to ensure effective drainage and structural functionality. To ensure slope protection and road stability, brick palisading walls and RCC retaining walls will be constructed where required. 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 3,900 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 1300m. 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
00-300	L		Ditches, pond, human settlement, and agriculture land.
		R	Agriculture land, human settlement, and pond.
300-600	L		Agriculture land and human settlement.
		R	Human settlement, agriculture land, and pond.
600-900	L		Human settlement and agriculture land.
		R	Human settlement and agriculture land.
900-1200	L		Pond, agriculture land, and human settlement.
		R	Human settlement, agriculture land, and pond.
1200-1300	L		Agriculture land, human settlement, and mosque.
		R	Human settlement, agriculture land, and pond.



Starting Point of Taltola Pucca road -Dinor bazar via Kalirpat 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

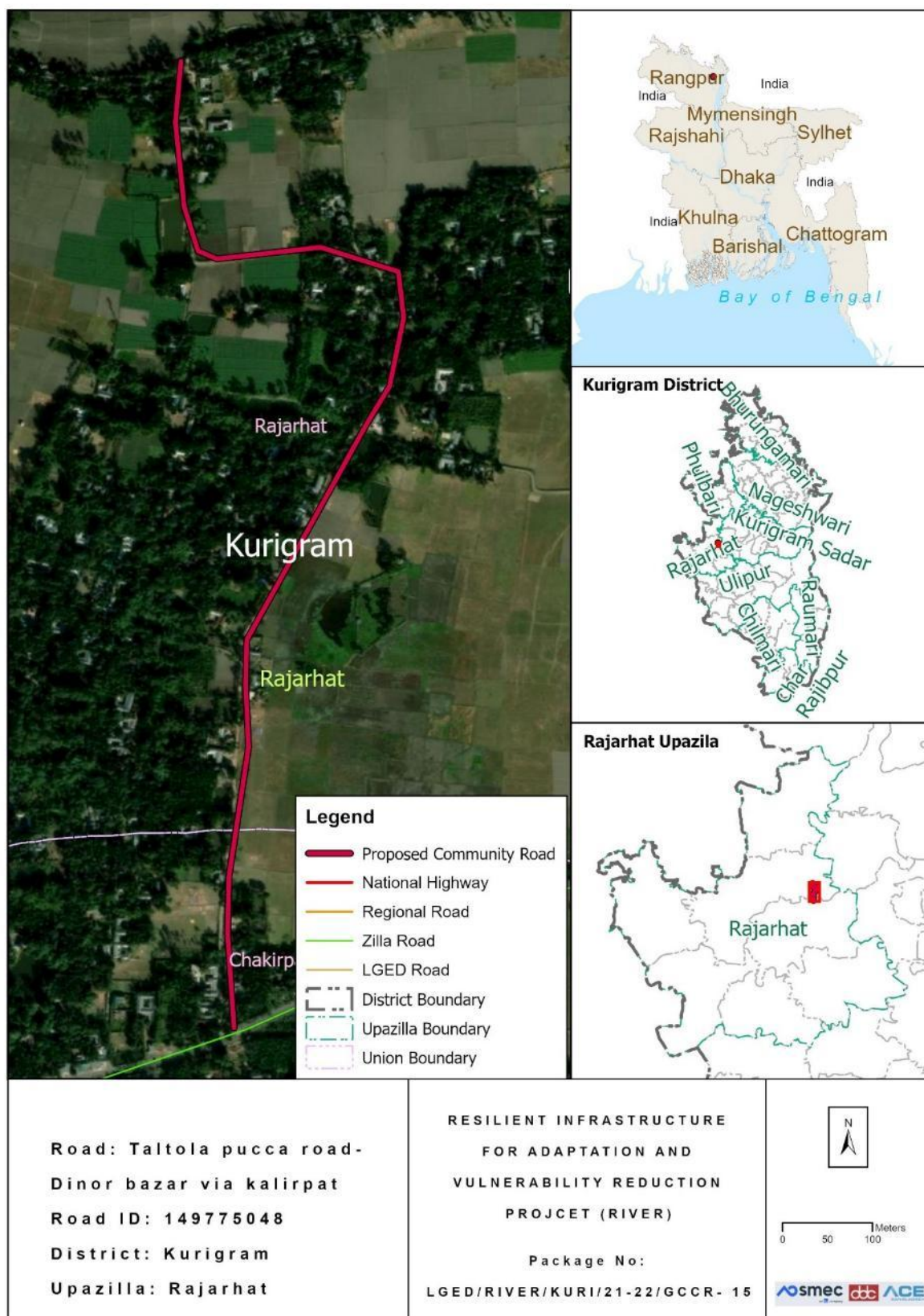
and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects.

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:

Within the influence area of the subproject no historical sites were identified. From 00-300m, the left side includes ditches, a pond, human settlement, and agricultural land, while the right side has agricultural land, human settlement, and a pond. Between 300-600m, the left side features agricultural land and human settlement, and the right side has human settlement, agricultural land, and a pond. The 600-900m stretch is characterized by human settlement and agricultural land on the left, and human settlement and agricultural land on the right. In the 900-1200m section, the left side has a pond, agricultural land, and human settlement, while the right side includes human settlement, agricultural land, and a pond. From 1200-1300m, the left side features agricultural land, human settlement, and a mosque, while the right side has human settlement, agricultural land, and a pond.



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 involves of Bituminous Carpeting (BC) and earthen. According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 00 to Ch. 1300m.

Sub-project Location:

Important Features	
ID	149775048
District	Kurigram
Upazila	Rajarhat
Union	Chakirposhar
Total Chainage	1300m
Proposed Chainage	1300m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	25.801082 N 89.574032 E
Road Ending Point Coordinates	25.810740 N 89.573558 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 Chatmadhai, Dudkhaoya, and Bajemujrai.
- 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 environmental features are located within approximately 100 meters of the project site. From 00-300m, the left side includes ditches, a pond, human settlement, and agricultural land, while the right side has agricultural land, human settlement, and a pond. Between 300-600m, the left side features agricultural land and human settlement, and the right side has human settlement, agricultural land, and a pond. The 600-900m stretch is characterized by human settlement and agricultural land on the left, and human settlement and agricultural land on the right. In the 900-1200m section, the left side has a pond, agricultural land, and human settlement, while the right side includes human settlement, agricultural land, and a pond. From 1200-1300m, the left side features agricultural land, human settlement, and a mosque, while the right side has human settlement, agricultural land, and a pond.

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 of Lalmonirhat District is located mainly in alluvial, silty, sandy soil formations. The soils of this area have developed primarily from recent alluvial deposits

carried by rivers such as the Teesta River and the Dharla River. The soils developing from these riverine deposits tend to be sandy loam to silty clay loams, which are generally fertile and suitable for agricultural activities.

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

Groundwater is the main source of potable water in the Sub-project area. The shallow depth is about 100 feet and deep tube well depth is 180 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Water from the shallower aquifers beneath the Sub-project area contains high concentration of iron. Deep groundwater table (drinkable) varies from 100-180ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

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

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

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

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 pre - existing drainage channel is found.

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: Taltola Pucca road -Dinor via kalirpat. (149775048)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs - All the safeguard documents will be disclosed to all relevant stakeholders. - People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating dust and noise)	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU
Pre-Construction	Sanitation and water supply	Sanitation facilities (male and female toilets with septic tanks, wash-basins, etc.) for workers and constructor's	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Stage		officials/employees will be provided, and ensure regular cleaning of those. Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.		
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	- Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. - Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. - Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	- All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind or surface runoff. - Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow. - Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. - After completing the development, the site shall be restored as before.	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. - Sub project intervention must avoid natural disturbance to existing slop and natural drainage.		
Construction Activity	Noise from construction works	- Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. - All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. - Noise producing vehicles and equipment will be keep in maintenance regularly. - Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works.	Contractor	Environmental Consultant of PIU
Construction Activity	Dust	- Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. - Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. - Construction materials should be covered properly while carrying in vehicles to the site.		
Construction Activity	Safety Issues	- Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance) - Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. - Records of every training must be kept at site. - All kinds of Child labour are completely prohibited in every site. - Every construction materials storage site will be well fenced by Tin and safety caution tape.	Contractor	Environmental Consultant of PIU
Construction Activity	Traffic Management	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.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. - Local traffic police department should be contacted, if traffic problem becomes more complex.		
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement of heavy machinery and equipment. - Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. - Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) - Local community will be trained up on traffic management and awareness.	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. - Adequate facilities ensuring sanitation for labor camps will be put in place. - Treated water will be made available at site for drinking	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Labour related issues and grievances	• A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: • Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. - Refueling areas and other fluid transfer areas will be imperviously paved. - Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. - Applicability of the Hazardous Waste Management Rules.		
Construction Activity	Health & Safety Risks: - The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. - Exposure to health	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. - Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. - Proper Signpost at any slippery areas will be ensured in construction site. - Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire.	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
	events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. - Adequate quantities of drinking water will be available at all Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters	Contractor	Environmental Consultant of

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • 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. • Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.		PIU/D&SC.
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance	• Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; • Ensure that all affected structures rehabilitated/compensated; • The area that previously housed the construction camp	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	after the construction). The impacts are similar to those listed in construction stage: • Pollution from waste materials. • Health & Safety risks to workers and local community.	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; • All imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. • The contractor must arrange the cancellation of all temporary services.		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	• Preventative maintenance schedule should be followed. • Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time.	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	• The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. • Contractor shall submit regular monthly monitoring	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.		
Operation & Maintenance	Road Safety. Impacts include: - The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers. - Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries.	Road safety issues can be minimized in following ways: - By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. - Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. Road signage and speed breaker for School (1+279) and road signage for graveyard (0+758) shall be installed/ constructed. - All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.	UE (Upazila Engineer)	District Executive Engineer, LGED
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in	Upazila Engineer	District XEN, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		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

SI no.	Description of item	Quantity	Unit price	Total amount
1.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	1560 Sq.m	@38.15 Tk. Per sqm	59,514.00
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	1300.0 m	@ 2.56 BDT	3,328.00
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain	1 no.	LS @5000 Tk. Per box	5,000

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.	<u>Drinking Water Facilities</u> 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.	1 no.	LS @ Tk. 30,000	30,000
6.	<u>Traffic Management</u> 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.	1 no.	LS @ Tk. 15,000	15,000
7.	<u>Personal Protection Equipment for Workers</u> 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	LS	LS @ Tk 30,000	30,000
8.	<u>Motivation training</u>	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.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. <u>[One person to be appointed for 19 roads]</u>	Each	@ Tk. 35000	35,000
	Total amount for this road			253,487.72



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for **Basrah Madrasha - Jarijar Tutapaikar Bazer Road ID:149774059**

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

District: Lalmonirhat **Upazila:** Boroibari **Union:** Borobari

Name of Community/Local Area: Boliram, Airkhamar, Borobari

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The sub-project is categorized as a village road development project with bituminous carpeting. To ensure adequate drainage of floodwater, four box culverts will be constructed along the road alignment. These include: one culvert (5.5 m × 6.8 m) at chainage 076 m, two culverts (5.0 m × 2.0 m) at chainage 272 m, one culvert (4.0 m) at chainage 519 m, and one culvert (5.5 m × 2.0 m) at chainage 770 m. The existing culverts at these locations will be renovated, if necessary. To provide slope protection and maintain the structural stability of the road, brick palisading walls and reinforced cement concrete (RCC) retaining walls will be constructed at required locations. 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 3780 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 2110 m. 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		Agriculture land, human settlement, fish pond and pond.
		R	Agriculture land, pond, beel.
300-600	L		Ditches, pond, human settlement, and agriculture land
		R	Human settlement, agriculture land, and pond.
600-900	L		Agriculture land, pond, and fishpond.
		R	Human settlement, agriculture land, and pond.
900-1200	L		Agriculture land, human settlement, and pond.
		R	Pond, fishpond, and agriculture land.

1200-1500	L		Human settlement, and fishpond.
		R	Agriculture land, and fishpond.
1500-1800	L		Human settlement, and Agriculture land.
		R	Pond, human settlement and agriculture land.
1800-2110	L		Agriculture land, and human settlement
		R	Human settlement, and Agriculture land.



Starting Point of Airkhamar Bazar to Eidgha 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

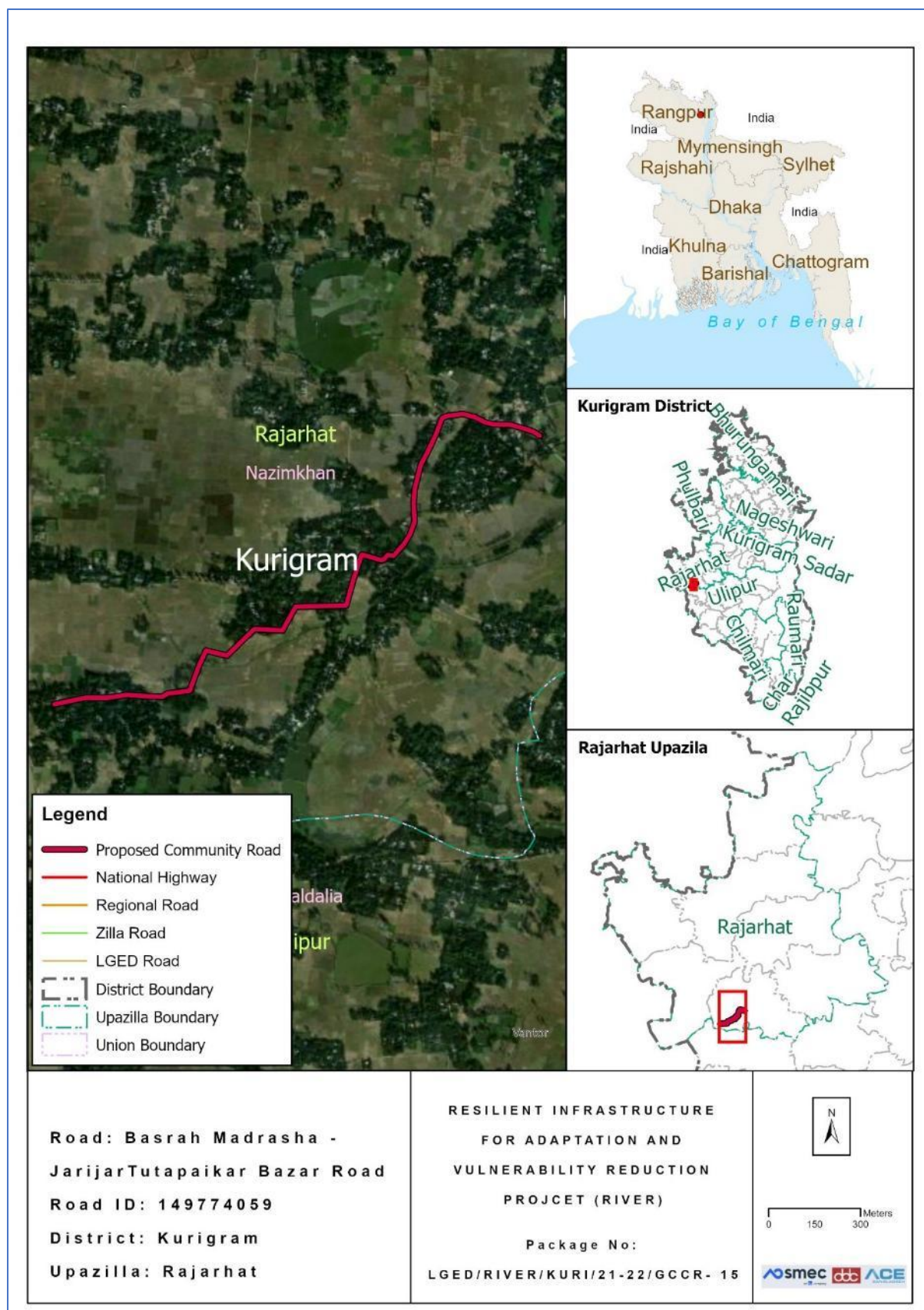
concerning matter during rainy season. The proposed Sub-project area for the construction included flat areas and moderate hillock village road is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental 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:

Within the influence area of the subproject no historical sites were identified. The sub-project is located in Baroshudai Baza, Nasimkhey villages under Nasimkhey union. Several community facilities and assets are located within approximately 100 meters of the proposed road alignment. On the left side of the road, these include a local bazaar (36 m) and two ponds (each approximately 36 m from the alignment). On the right side, community facilities and a mosque. No significant religious or cultural heritage sites will be affected by the proposed sub-project. Therefore, project activities are not expected to cause any disturbance to the religious or cultural values of the local community.



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 involves of Bituminous Carpeting (BC). According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 00 to Ch. 1260m.

Sub-project Location:

Important Features	
ID	152554067
District	Lalmonirhat
Upazila	Boraibari
Union	Borobari
WARD	05
Total Chainage	1260m
Proposed Chainage	1260m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 25.871521 N Longitude: 89.524539 E
Road Ending Point Coordinates	Latitude: 25.872278 N Longitude: 89.535698 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 Baroshudai Baza, Nasimkhey 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:

Within the influence area of the subproject no historical sites were identified. The sub-project is located in Baroshudai Baza, Nasimkhey villages under Nasimkhey union. Several community facilities and assets are located within approximately 100 meters of the proposed road alignment. On the left side of the road, these include a local bazaar (36 m) and two ponds (each approximately 36 m from the alignment). On the right side, community facilities and a mosque. No significant religious or cultural heritage sites will be affected by the proposed sub-project. Therefore, project activities are not expected to cause any disturbance to the religious or cultural values of the local community.

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 of Lalmonirhat District is located mainly in **alluvial, silty, sandy soil formations**. The soils of this area have developed primarily from **recent alluvial deposits carried by rivers such as the Teesta River and the Dharla River**. The soils developing from

these riverine deposits tend to be **sandy loam to silty clay loams**, which are generally fertile and suitable for agricultural activities.

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

Groundwater serves as the primary source of potable water in the Sub-project area. The local population relies predominantly on both shallow and deep tube wells to meet their daily domestic water requirements. Deep tube wells in the area typically range in depth from 30 to 350 feet. During the dry season, however, shallow tube wells often fail to provide a reliable water supply. Investigations indicate that deep groundwater in the Sub-project area is generally fresh, potable, and free from arsenic contamination. In contrast, water from the shallow aquifers contains elevated concentrations of iron, limiting its suitability for domestic consumption. The depth to the deep, drinkable groundwater table ranges from approximately 30 to 350 feet (Field Survey, 2019). Consequently, the local population predominantly relies on deep tube well water for drinking and other domestic purposes. It is recommended that deep tube wells be installed to extract water from the confined aquifer, ensuring a consistent and safe supply of potable water for the community.

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

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

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 pre - existing drainage channel is found.
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: Basrah Madrasha - Jarijar Tutapaikar Bazer Road (149774059)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	- No land acquisition is allowed in or nearby areas of the sub-project, or for any sub-project related activities. Therefore, no mitigation measures are suggested in this respect. - If and whenever any land/physical assets related grievances are raised at any point of the subproject implementation, project GRCs will take due course of actions to resolve the issues or grievances.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of livelihood	- Under this subproject, there is no scope of negative impact on the livelihoods of adjacent communities or people. - Contractors will be encouraged to engage local labors (both skilled and unskilled) as priority at their construction works, and women labor would get higher priority in recruitment.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs	PIU & Contractor	Social Development Specialist and Gender Specialist

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- All the safeguard documents will be disclosed to all relevant stakeholders. - People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.		of PIU
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating dust and noise)	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Sanitation and water supply	- Sanitation facilities (male and female toilets, wash-basins, etc.) for workers and constructor's officials/employees will be provided. - Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.		
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	- Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. - Construction of sanitary latrine with septic tank for both male and female workers and staffs; and ensure regular cleaning of those. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage; removal/relocation of utility services	• All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. • Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow.	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage. • Existing utility services must be relocated or adjusted where they obstruct the works or pose a risk of damage, in close cooperation with the appropriate authority. • The contractor must ensure sound environment for the local residents near the sub project site.		
Construction Activity	Noise from construction works	• Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be kept in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works.		
Construction Activity	Dust	• Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. • Dust generation must be limited as a result of clearing, leveling and site grading operations with using water hoses manually and through water pipes. • Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. • Construction materials should be covered	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		properly while carrying in vehicles to the site.		
Construction Activity	Safety Issues	- Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance) - Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. - Records of every training must be kept at site. - All kinds of Child labour are completely prohibited in every site. - Every construction materials storage site will be well fenced by Tin and safety caution tape.	Contractor	Environmental Consultant of PIU
Construction Activity	Traffic Management	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.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. - Local traffic police department should be contacted, if traffic problem becomes more complex.		
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- Water sources (e.g., ground or surface water) for construction works will be determined in consultation with the local DPHE office, considering the availability of nearby resources and technical options, and potential risks of extracting water from the same sources used by other consumer groups especially during the critical period. - Water from any installed tubewell or an existing surface water bodies within the nearby places will be used for construction works, if the available water quality satisfies the required standards for construction works. - If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		need to be taken before extraction or setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Local community must be consulted before any construction works start.		
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement of heavy machinery and equipment. - Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. - Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) - Local community will be trained up on traffic management and awareness.	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	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	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Labour related issues and grievances	• A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
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: • Waste from the temporary accommodation facilities for labor • Waste from equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. • Working areas are kept clean and tidy at all times. • Construction site is to be checked for spills of substances i.e. chemical, oil, etc. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		bounded area and subsequently sold to authorized recyclers. • Refueling areas and other fluid transfer areas will be imperviously paved. • Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. • Applicability of the Hazardous Waste Management Rules.		
Construction Activity	Slipping of soil masses, dust deposition, draining or spillage of chemicals/contaminants, etc. to nearby water bodies	• Slope protection measures (proper compaction, palisading or protection walls, etc.) will be taken before starting work at any sensitive section of the road. • Dust suppression measures and material storage and handling procedure have to be undertaken with proper care and vigilance to avoid or minimize the impacts.	Contractor	Environmental and Social Development Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: • The potential for exposure to safety events such as tripping, working at	• All construction equipment will be properly inspected timely. • The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site.	Contractor	Environmental Consultant as well as Social Development and Gender Specialists

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. - Proper Signpost at any slippery areas will be ensured in construction site. - Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project will have Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper		of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Emergency evacuation response plan will exist in sub-project area. • All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. • Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Pollution of water bodies	• Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. • All precautions to store chemicals/oil/fuel properly so that no chance of spill.	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.		
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage: - Pollution from waste materials. - Health & Safety risks to workers and local community.	- Provision to proper measures of mitigation and monitoring to minimize or reduce the environmental and social impacts during demobilization, which are anticipated to be similar to those identified for the construction phase. Some of the measures include: (i)remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; (ii) ensure that all affected structures rehabilitated/compensated; (iii) the area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; (iv) all imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. - The contractor must arrange the cancellation	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		of all temporary services.		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time.	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	- The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. - Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.	Contractor	Environmental Consultant of PIU
Operation & Maintenance	Road Safety. Impacts include:	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
	- The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers. - Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries.	- By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. - Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. - All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	UE	District 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.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	2532.00 Sq.m	@38.15 Tk. Per sqm	96,595.80
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	2110.0 m	@ 2.56 BDT	5,401.60
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with	1 no.	LS @5000 Tk. Per box	5,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
	the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<u>Drinking Water Facilities</u> 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.	1 no.	LS @ Tk. 30,000	30,000
6.	<u>Traffic Management</u> 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.	1 no.	LS @ Tk. 15,000	15,000
7.	<u>Personal Protection Equipment for Workers</u> 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.	LS	LS @ Tk 30,000	30,000

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

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report of Community Roads for Kurigram District (GCCR-15)

Sl. no.	Description of item	Quantity	Unit price	Total amount
	phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. [One person to be appointed for 19 roads]			
	Subtotal Bill: Environmental facilities			292,643.12



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for **Sonatali Pukurpar to Vot hat Bazar via Sore Beparir Ghat. Road ID: 149064050**

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

District: Kurigram
Sadar

Upazila: Bhurungamari

Union: Bhurungamari

Name of Community/Local Area: Sonatoli, Purbo Bothat, Bhurungamari Sadar

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The Sub-Project is categorized as a union road and construction with Bituminous Carpeting options. For proper drainage of floodwater along the project alignment, several cross-drainage structures will be constructed and rehabilitated. BC-0+000 to 2+737, Palisading-(Ch. 11-31m), Box Culvert- Ch. 60 m, Ch. 150 m, &Ch. 2010m, Slope Protection- Ch. 95 to 542m, Palisading-Ch. 560 to 574m, -Ch. 2+291 to 2+325m, Ch. 2269 to 2291m, & Ch. 2298 to 2325m, RCC Palisading-(Ch. 1428 to 1451m & Ch. 2188 to 2211m. To ensure slope protection and road stability, brick palisading walls and RCC retaining walls will be constructed where required. 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 8211 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 2737m. 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
00-300	L		Chainage 00m_ Shop.
		R	Chainage 0.00m_ Pond, chainage 61.00m house.
300-600	L		Chainage 370m, house, chainage-425m- Sonatoli pukurpar gram samiti, chainage- 480m- house, chainage-500 m-pond, chainage-560m- pond, chainage-580m- house.
		R	Agricultural land
600-900	L		Chainage 890m, pond.
		R	Agricultural land
900-1200	L		Chainage 1050m, house.
		R	Chainage 1136m-house, chainage 1183m- pond.

Chainage	(Left/Right)		Environment and Social Impact
1200-1500	L		Chainage 1268m- Eidgah Field, chainage 1424m pond.
		R	Chainage 1348m- Mosque.
1500-1800	L		Chainage 1670m- house, chainage 1730m- pond.
		R	Chainage 1840m- Purbo Volhat Gram Samiti, chainage 1865m- pond.
1800-2100	L		Agricultural land
		R	Chainage 1985m- KUR-005 Khamarpatra Nabish GPS (100m distance), chainage 1990m- pond, chainage 2490m- house.
2100-2400	L		Chainage 2205m- pond, chainage 2220m- mosque, chainage 2770m- pond.
		R	Chainage 2420m- house.
2400-2737	L		Human settlement, agriculture land, and pond.
		R	Agricultural land



Starting Point of Sonatali Pukurpar to Vot hat Bazar via Sore Beparir Ghat.

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.

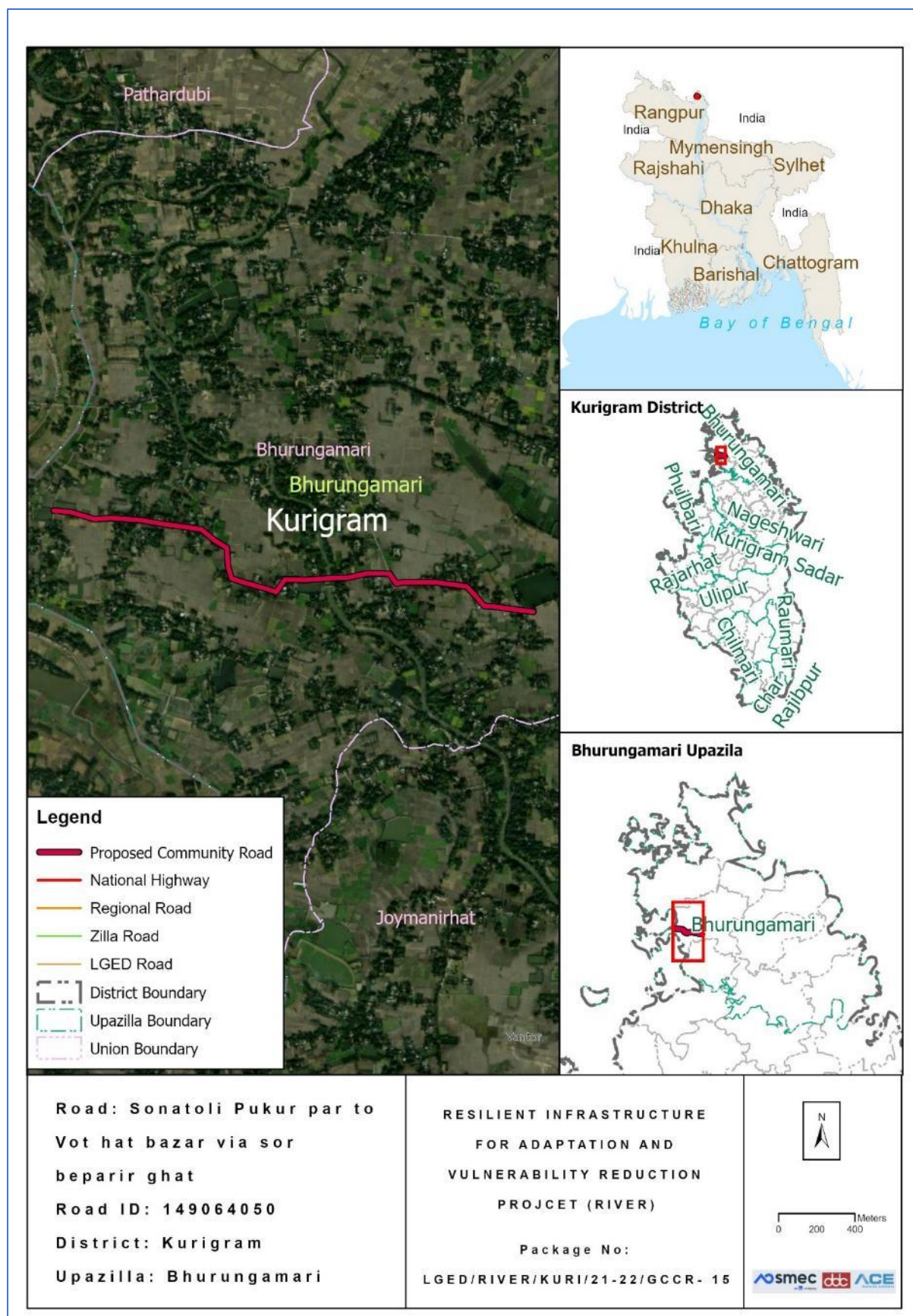
It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation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

Within the influence area of the subproject no historical sites were identified. The sub-project is located within Sonatoli, Purbo Bothat, Bhurungamari Sadar villages. Several community features and assets are situated within approximately 100 meters of the project alignment. On the left side of the road, the surrounding land uses include several trees such as Kadam and mango, along with a pond. Similarly, the right side of the road contains Banyan, Khejur, mango, and coconut trees, as well as Khamarpatra Nabish GPS and Eidgah Field. No significant religious or cultural heritage sites will be affected by the proposed sub-project. The project activities are not expected to cause any disturbance to the religious or cultural values of the local community.



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 Bituminous Carpeting (BC) and earthen. According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 00 to Ch. 2737m.

Sub-project Location:

Important Features	
ID	149064050
District	Kurigram
Upazila	Bhurungamari
Union	Bhurungamari Sadar
Total Chainage	2737m
Proposed Chainage	2737m
Road Type	Union Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 26.10802724 N Longitude: 89.65080437 E
Road Ending Point Coordinates	Latitude: 26.11266525 N Longitude: 89.62840153 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 Sonatoli, Purbo Bothat, Bhurungamari Sadar 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:

Within the influence area of the subproject no historical sites were identified. The sub-project is located within Sonatoli, Purbo Bothat, Bhurungamari Sadar villages. Several community features and assets are situated within approximately 100 meters of the project alignment. On the left side of the road, the surrounding land uses include several trees such as Kadam and mango, along with a pond. Similarly, the right side of the road contains Banyan, Khejur, mango, and coconut trees, as well as Khamarpatra Nabish GPS and Eidgah Field. No significant religious or cultural heritage sites will be affected by the proposed sub-project. The project activities are not expected to cause any disturbance to the religious or cultural values of the local community.

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 of Lalmonirhat District is located mainly in alluvial, silty, sandy soil formations. The soils of this area have developed primarily from recent alluvial deposits carried by rivers such as the Teesta River and the Dharla River. The soils developing from these riverine deposits tend to be sandy loam to silty clay loams, which are generally fertile and suitable for agricultural activities.

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

Groundwater is the main source of potable water in the Sub-project area. The shallow depth is about 100 feet and deep tube well depth is 180 feet. But the shallow tube well is not working properly during the dry season. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Water from the shallower aquifers beneath the Sub-project area contains high concentration of iron. Deep groundwater table (drinkable) varies from 100-180ft (Field survey, 2019). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC - 25.7 to 681 μ s/cm, Fe-0.5 to 7.0 mg/l and As-Nil (Field Study Report, January 2026)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

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 pre - existing drainage channel is found.

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: Sonatali Pukurpar to Vot hat Bazar via Sore Beparir Ghat.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	- No land acquisition is allowed in or nearby areas of the sub-project, or for any sub-project related activities. Therefore, no mitigation measures are suggested in this respect. - If and whenever any land/physical assets related grievances are raised at any point of the subproject implementation, project GRCs will take due course of actions to resolve the issues or grievances.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of livelihood	- Under this subproject, there is no scope of negative impact on the livelihoods of adjacent communities or people. - Contractors will be encouraged to engage local labors (both skilled and unskilled) as priority at their construction works, and women labor would get higher priority in recruitment.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- All the safeguard documents will be disclosed to all relevant stakeholders. - People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.		
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating dust and noise)	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Sanitation and water supply	- Sanitation facilities (male and female toilets, wash-basins, etc.) for workers and constructor's officials/employees will be provided. - Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.		
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	- Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. - Construction of sanitary latrine with septic tank for both male and female workers and staffs; and ensure regular cleaning of those. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage; removal/relocation of utility services	• All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. • Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow.	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage. • Existing utility services must be relocated or adjusted where they obstruct the works or pose a risk of damage, in close cooperation with the appropriate authority. • The contractor must ensure sound environment for the local residents near the sub project site.		
Construction Activity	Noise from construction works	• Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be kept in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works.		
Construction Activity	Dust	• Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. • Dust generation must be limited as a result of clearing, leveling and site grading operations with using water hoses manually and through water pipes. • Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. • Construction materials should be covered	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		properly while carrying in vehicles to the site.		
Construction Activity	Safety Issues	- Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance) - Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. - Records of every training must be kept at site. - All kinds of Child labour are completely prohibited in every site. - Every construction materials storage site will be well fenced by Tin and safety caution tape.	Contractor	Environmental Consultant of PIU
Construction Activity	Traffic Management	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.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. - Local traffic police department should be contacted, if traffic problem becomes more complex.		
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- Water sources (e.g., ground or surface water) for construction works will be determined in consultation with the local DPHE office, considering the availability of nearby resources and technical options, and potential risks of extracting water from the same sources used by other consumer groups especially during the critical period. - Water from any installed tubewell or an existing surface water bodies within the nearby places will be used for construction works, if the available water quality satisfies the required standards for construction works. - If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		need to be taken before extraction or setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. - Local community must be consulted before any construction works start.		
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement of heavy machinery and equipment. - Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. - Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) - Local community will be trained up on traffic management and awareness.	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	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	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Labour related issues and grievances	• A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
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: • Waste from the temporary accommodation facilities for labor • Waste from equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. • Working areas are kept clean and tidy at all times. • Construction site is to be checked for spills of substances i.e. chemical, oil, etc. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		bounded area and subsequently sold to authorized recyclers. • Refueling areas and other fluid transfer areas will be imperviously paved. • Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. • Applicability of the Hazardous Waste Management Rules.		
Construction Activity	Slipping of soil masses, dust deposition, draining or spillage of chemicals/contaminants, etc. to nearby water bodies	• Slope protection measures (proper compaction, palisading or protection walls, etc.) will be taken before starting work at any sensitive section of the road. • Dust suppression measures and material storage and handling procedure have to be undertaken with proper care and vigilance to avoid or minimize the impacts.	Contractor	Environmental and Social Development Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: • The potential for exposure to safety events such as tripping, working at	• All construction equipment will be properly inspected timely. • The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site.	Contractor	Environmental Consultant as well as Social Development and Gender

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. - Proper Signpost at any slippery areas will be ensured in construction site. - Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project will have Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper		Specialists of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Emergency evacuation response plan will exist in sub-project area. • All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. • Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Pollution of water bodies	• Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. • All precautions to store chemicals/oil/fuel properly so that no chance of spill.	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.		
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage: - Pollution from waste materials. - Health & Safety risks to workers and local community.	- Provision to proper measures of mitigation and monitoring to minimize or reduce the environmental and social impacts during demobilization, which are anticipated to be similar to those identified for the construction phase. Some of the measures include: (i)remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; (ii) ensure that all affected structures rehabilitated/compensated; (iii) the area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; (iv) all imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. - The contractor must arrange the cancellation	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		of all temporary services.		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time.	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	- The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. - Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.	Contractor	Environmental Consultant of PIU
Operation & Maintenance	Road Safety. Impacts include:	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
	- The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers. - Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries.	- By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. - Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. - All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	UE	District 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.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	3284.40 Sqm	@38.15 Tk. Per sqm	125,299.86
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	2737m	@ 2.56 BDT	7,006.72
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.8 6 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain	1 no.	LS @5000 Tk. Per box	5,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
	necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<u>Drinking Water Facilities</u> 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.	1 no.	LS @ Tk. 30,000	30,000
6.	<u>Traffic Management</u> 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.	1 no.	LS @ Tk. 15,000	15,000
7.	<u>Personal Protection Equipment for Workers</u> 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	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 Kurigram District (GCCR-15)

Sl. no.	Description of item	Quantity	Unit price	Total amount
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. [One person to be appointed for 8 roads]	Each road	@ Tk. 35000	35000
	Total amount for this road			322,952.30



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for **Bangosona Hat - Shahi Bazer Road**,
Road ID: 149064041

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

District: Kurigram

Upazila: Bhurungamari

Union: Boldia

Name of Community/Local Area: Shahi Bazar, Boldia, Bhurungamari

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The sub-project is categorized as a village road development project with bituminous carpeting. For proper drainage of floodwater, 4 nos. Box Culvert Ch. 271m, Ch. 327m, Ch. 386m and Ch. 127m. To ensure slope protection and road stability, brick palisading walls and RCC retaining walls will be constructed where required. 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 4500 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 1500m. 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
00-300	L		Biddananda College, Hat-bazar shops, agricultural land, pond, and ditches.
		R	Agriculture land, pond, and human settlement.
300-600	L		Agriculture land, human settlement, ditches, Sukhdev community clinic, and mosque.
		R	Agriculture land, human settlement, ditches and pond.
600-900	L		Agriculture land, pond, and fishpond.
		R	Human settlement, agriculture land, and pond.
900-1200	L		Agriculture land, human settlement, and pond.
		R	Pond, fishpond, and agriculture land.
1200-1500	L		Human settlement, and fishpond.
		R	Agriculture land, and fishpond.



Starting Point of Kalibari Rudreshwar to Mohishamuri 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

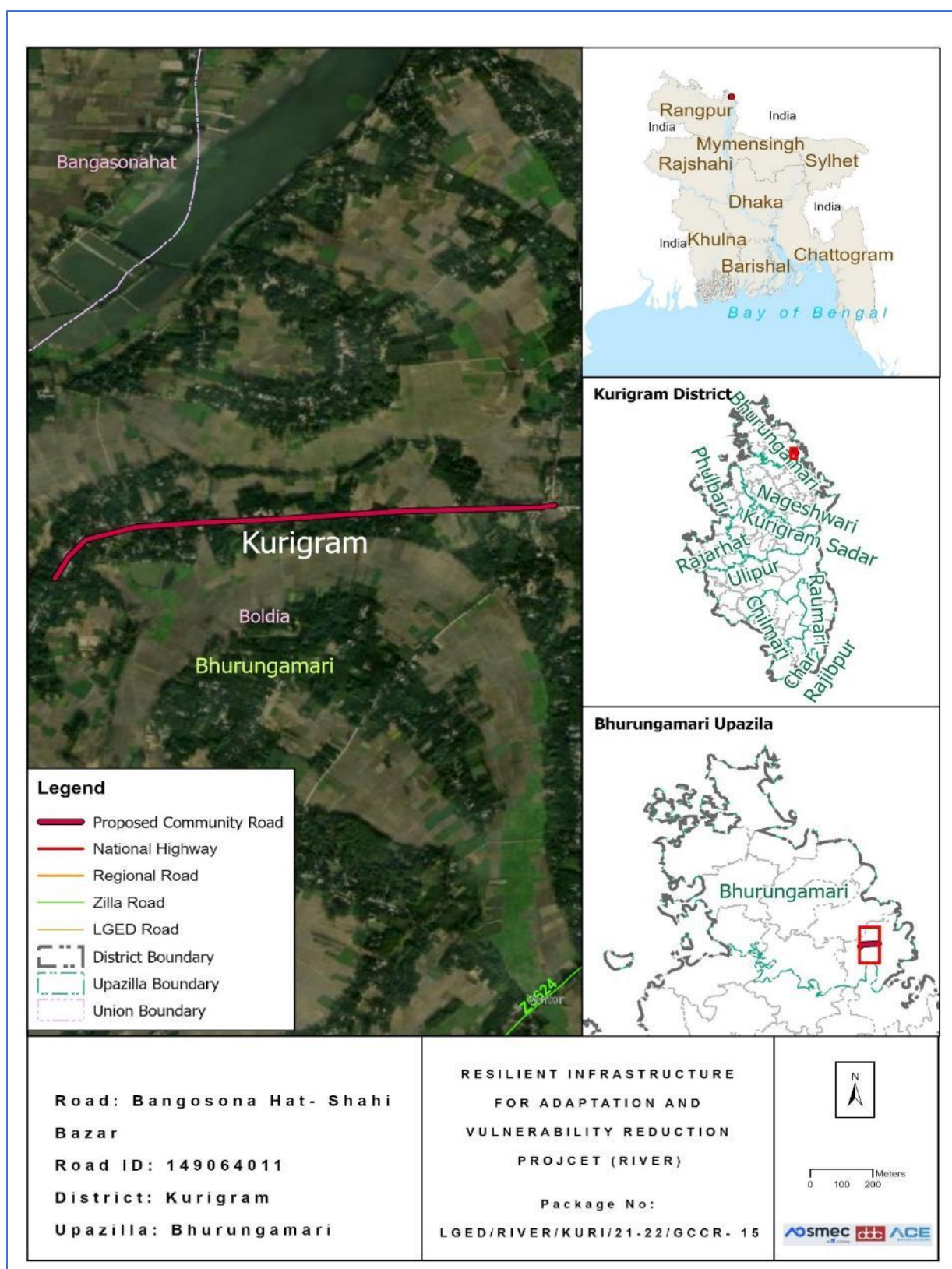
features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects.

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:

Within the influence area of the subproject no historical sites were identified. The sub-project is located within Shahi Bazar, Boldia, Bhurungamari villages under Boldia Union. Several community features and assets are situated within approximately 100 meters of the project alignment. On the left side of the road, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right side, there are damaged structures, houses, ponds, trees, and an existing bridge. No significant religious or cultural heritage sites will be affected by the proposed sub-project. The project activities are not expected to cause any disturbance to the religious or cultural values of the local community.



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 involves of Bituminous Carpeting (BC) and earthen. According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 00 to Ch. 2880m.

Sub-project Location:

Important Features	
ID	152394016
District	Lalmonirhat
Upazila	Kaliganj
Union	Kakina
WARD	09
Total Chainage	2880m
Proposed Chainage	2880m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 26.07155581 N Longitude: 26.07155581 N
Road Ending Point Coordinates	Latitude: 26.06935332 N Longitude: 89.75407145 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 Shahi Bazar, Boldia, Bhurungamari 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:

Within the influence area of the subproject no historical sites were identified. The sub-project is located within Shahi Bazar, Boldia, Bhurungamari villages under Boldia Union. Several community features and assets are situated within approximately 100 meters of the project alignment. On the left side of the road, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right side, there are damaged structures, houses, ponds, trees, and an existing bridge. No significant religious or cultural heritage sites will be affected by the proposed sub-project. The project activities are not expected to cause any disturbance to the religious or cultural values of the local community.

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 of Lalmonirhat District is located mainly in alluvial, silty, sandy soil **formations**. The soils of this area have developed primarily from recent alluvial deposits carried by rivers such as the Teesta River **and the** Dharla River. The soils developing from these riverine deposits tend to be **sandy loam to silty clay loams**, which are generally fertile and suitable for agricultural activities.

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

Groundwater is the primary source of potable water in the sub-project area. Residents rely on both shallow and deep tube wells to meet their daily domestic water needs. Deep tube wells in the area typically extend to a depth of approximately 180 feet. Shallow tube wells, however, often fail to provide sufficient water during the dry season. Deep groundwater in the sub-project area is fresh, potable, and free from arsenic. In contrast, water from the shallower aquifers contains high concentrations of iron, limiting its suitability for drinking. The depth of the deep, drinkable groundwater varies between 100 and 180 feet, according to a field survey conducted in 2019. Local residents primarily use water from deep tube wells for drinking and other domestic purposes. It is recommended that additional deep tube wells be installed to extract water from the confined aquifer to ensure a safe and reliable supply of potable water. Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (Field Study Report, January 2026)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

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 pre - existing drainage channel is found.
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: Bangosona Hat - Shahi Bazer (149064041)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	- No land acquisition is allowed in or nearby areas of the sub-project, or for any sub-project related activities. Therefore, no mitigation measures are suggested in this respect. - If and whenever any land/physical assets related grievances are raised at any point of the subproject implementation, project GRCs will take due course of actions to resolve the issues or grievances.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs - All the safeguard documents will be disclosed to all relevant stakeholders. - People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction	Loss of right to access	Project to ensure thorough analysis of alternatives that access enjoyed by the	PIU	Social Development Specialist and

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Stage		community remains intact. In case of unavoidable circumstances, alternative access will be provided.		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)	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Sanitation and water supply	- Sanitation facilities (male and female toilets, wash-basins, etc.) for workers and constructor's officials/employees will be provided. - Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	- Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. • Construction of sanitary latrine with septic tank for both male and female workers and staffs; and ensure regular cleaning of those. • Provision of waste bins/ cans, where appropriate, • Litter is to be collected daily. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		clothes/jute sacks, etc. for avoiding any accidental events from those. - Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. - Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage; removal/relocation of utility services	- All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. - Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow. - Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. - After completing the development, the site shall be restored as before.	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. - Sub project intervention must avoid natural disturbance to existing slop and natural drainage. - Existing utility services must be relocated or adjusted where they obstruct the works or pose a risk of damage, in close cooperation with the appropriate authority. - The contractor must ensure sound environment for the local residents near the sub project site.		
Construction Activity	Noise from construction works	- Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. - All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. - Noise producing vehicles and equipment will be keep in maintenance regularly. - Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works.		
Construction Activity	Dust	- Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. - Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. - Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. - Construction materials should be covered properly while carrying in vehicles to the site.	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		office and stack yards, and maintaining a visitor's log book at entrance) • Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. • Records of every training must be kept at site. • All kinds of Child labour are completely prohibited in every site. • Every construction materials storage site will be well fenced by Tin and safety caution tape.		
Construction Activity	Traffic Management	• Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. • Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Local traffic police department should be contacted, if traffic problem becomes more complex.		
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	- Water sources (e.g., ground or surface water) for construction works will be determined in consultation with the local DPHE office, considering the availability of nearby resources and technical options, and potential risks of extracting water from the same sources used by other consumer groups especially during the critical period. - Water from any installed tubewell or an existing surface water bodies within the nearby places will be used for construction works, if the available water quality satisfies the required standards for construction works. - If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority need to be taken before extraction or setting up bore wells. - Any type of consent letter or agreement for withdrawing water from either surface or	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		underground sources will be kept on site. Local community must be consulted before any construction works start.		
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement of heavy machinery and equipment. - Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. - Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) - Local community will be trained up on traffic management and awareness.	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	- Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. - Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Labour related issues and grievances	• A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-	Preparation of a waste management plan covering the following aspects: • Waste from the temporary accommodation facilities for labor	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	hazardous waste during construction.	- Waste from equipment maintenance/vehicles on-site. - The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. - Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. - Working areas are kept clean and tidy at all times. - Construction site is to be checked for spills of substances i.e. chemical, oil, etc. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. - Refueling areas and other fluid transfer areas		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		will be imperviously paved. - Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. - Applicability of the Hazardous Waste Management Rules.		
Construction Activity	Slipping of soil masses, dust deposition, draining or spillage of chemicals/contaminants, etc. to nearby water bodies	- Slope protection measures (proper compaction, palisading or protection walls, etc.) will be taken before starting work at any sensitive section of the road. - Dust suppression measures and material storage and handling procedure have to be undertaken with proper care and vigilance to avoid or minimize the impacts.	Contractor	Environmental and Social Development Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. - Provide walkways that are clearly designated as a walkway; all walkways shall	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
	electrical installation, mobile plant and vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	be provided with good conditions underfoot; signposted and with adequate lighting. - Proper Signpost at any slippery areas will be ensured in construction site. - Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - This sub project will have Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. - All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. - Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		ensured. Proper Emergency evacuation response plan will exist in sub-project area. • All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. • Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Pollution of water bodies	• Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. • All precautions to store chemicals/oil/fuel properly so that no chance of spill.	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.		
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage: - Pollution from waste materials. - Health & Safety risks to workers and local community.	Provision to proper measures of mitigation and monitoring to minimize or reduce the environmental and social impacts during demobilization, which are anticipated to be similar to those identified for the construction phase. Some of the measures include: (i)remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; (ii) ensure that all affected structures rehabilitated/compensated; (iii) the area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; (iv) all imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document.	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		The contractor must arrange the cancellation of all temporary services.		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time.	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	- The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. - Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Operation & Maintenance	Road Safety. Impacts include: - The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers. - Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries.	Road safety issues can be minimized in following ways: - By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. - Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. - All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.	UE (Upazila Engineer)	District Executive Engineer, LGED
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance	UE	District XEN, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		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.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	1800.00 Sq.m	@38.15 Tk. Per sqm	68,670.00
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	1500.0m	@ 2.56 BDT	3,840.00
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain	1 no.	LS @5000 Tk. Per box	5,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
	necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<u>Drinking Water Facilities</u> 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.	1 no.	LS @ Tk. 30,000	30,000
6.	<u>Traffic Management</u> 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.	1 no.	LS @ Tk. 15,000	15,000
7.	<u>Personal Protection Equipment for Workers</u> 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	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 Kurigram District (GCCR-15)

Sl. no.	Description of item	Quantity	Unit price	Total amount
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. [One person to be appointed for 19 roads]	Each	@ Tk. 35000	35,000
	Total Bill of Environmental facilities for this road			263,155.72



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for **Dhamsreni UP office-Anantapur hat Road, Road ID: 149943011**

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

District: Kurigram **Upazila:** Ulipur **Union:** Hatia

Name of Community/Local Area: Anantapur hat, Hatia, Ulipur.

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The sub-project is categorized as a village road development project with bituminous carpeting. For proper drainage of floodwater, one **Bridge** (10 m × 5 m) at chainage 619 m and another **Bridge** (40 m × 3.2 m) at chainage 1708 m will be renovated as required. In addition, one **Box Culvert** (5 m × 2.5 m) at chainage 1421 m will also be renovated if necessary. Slope protection works will be implemented along a 160 m section of the road, extending from chainage 800 m to chainage 960 m. These measures are proposed to protect the road embankment from erosion and to enhance the stability of the road structure, particularly during heavy rainfall and surface runoff conditions. To ensure slope protection and road stability, brick palisading walls and RCC retaining walls will be constructed where required. 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 8,640 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 1060m. 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
00-300	L		Abu Taha Adnan Shop.
		R	Nazrul Islam Shop.
300-600	L		House and trees.
		R	House.
600-900	L		House.
		R	Pond.

900-1060	L		Rana Store.
		R	Bagua Anantapur High School.



Starting Point of Dhamsreni UP office-Anantapur hat 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

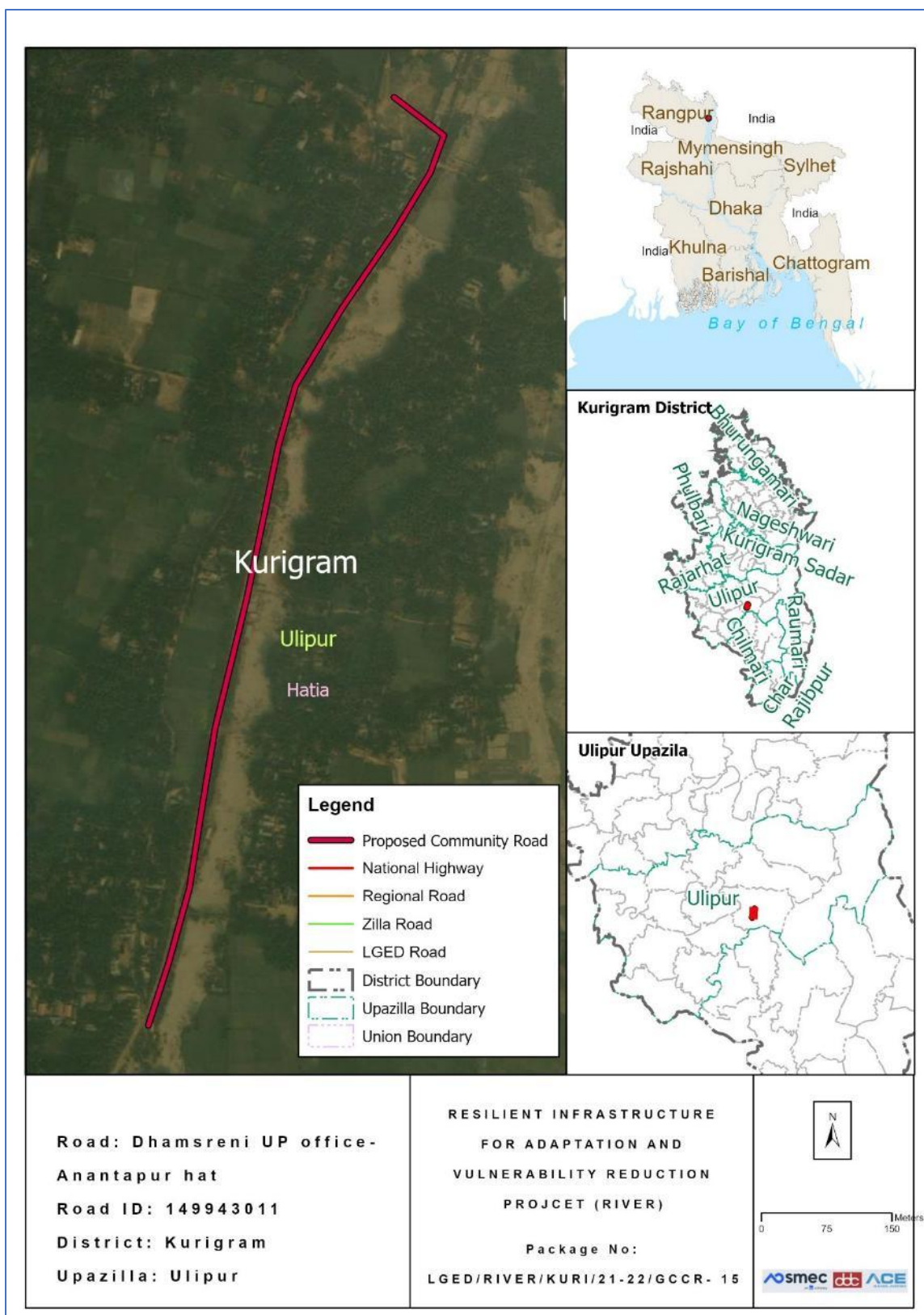
into the evaluation of this project since runoff from higher grounds are also a concerning matter during rainy season. The proposed Sub-project area for the construction included flat areas and moderate hillock village road is not located within any identified environmentally sensitive area, and therefore, 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:

Within the influence area of the subproject no historical sites were identified. The sub-project is located within Anantapur hat, Hatia, Ulipur. villages under Hatia Union. Several community features and assets are situated within approximately 100 meters of the project alignment. On the left side of the road, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right side, there are damaged structures, houses, ponds, trees, and an existing bridge. No significant religious or cultural heritage sites will be affected by the proposed sub-project. The project activities are not expected to cause any disturbance to the religious or cultural values of the local community.



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 involves of Bituminous Carpeting (BC) and earthen. According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 00 to Ch. 1060m.

Sub-project Location:

Important Features	
ID	149943011
District	Kurigram
Upazila	Ulipur
Union	Hatia
Total Chainage	1060m
Proposed Chainage	1060m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 25.672068 N Longitude: 89.687173 E
Road Ending Point Coordinates	Latitude: 25.681178 N Longitude: 89.689618 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 Anantapur hat, Hatia, Ulipur. Villages.
- 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:

Within the influence area of the subproject no historical sites were identified. The sub-project is located within Anantapur hat, Hatia, Ulipur villages under Hatia Union. Several community features and assets are situated within approximately 100 meters of the project alignment. On the left side of the road, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right side, there are damaged structures, houses, ponds, trees, and an existing bridge. No significant religious or cultural heritage sites will be affected by the proposed sub-project. The project activities are not expected to cause any disturbance to the religious or cultural values of the local community.

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 of Lalmonirhat District is located mainly in **alluvial, silty, sandy soil formations**. The soils of this area have developed primarily from **recent alluvial deposits carried by rivers such as the Teesta River and the Dharla River**. The soils developing from these riverine deposits tend to be **sandy loam to silty clay loams**, which are generally fertile and suitable for agricultural activities.

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

Groundwater is the primary source of potable water in the sub-project area. Residents rely on both shallow and deep tube wells to meet their daily domestic water needs. Deep tube wells in the area typically extend to a depth of approximately 180 feet. Shallow tube wells, however, often fail to provide sufficient water during the dry season. Deep groundwater in the sub-project area is fresh, potable, and free from arsenic. In contrast, water from the shallower aquifers contains high concentrations of iron, limiting its suitability for drinking. The depth of the deep, drinkable groundwater varies between 100 and 180 feet, according to a field survey conducted in 2019. Local residents primarily use water from deep tube wells for drinking and other domestic purposes. It is recommended that additional deep tube wells be installed to extract water from the confined aquifer to ensure a safe and reliable supply of potable water.

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

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

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.

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 pre - existing drainage channel is found.
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: Dhamsreni UP office-Anantapur hat (149943011)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs - All the safeguard documents will be disclosed to all relevant stakeholders. - People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	dust and noise)			
Pre-Construction Stage	Sanitation and water supply	- 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. - Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	- Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times. - Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. - Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. - Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	- All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. - Construction facilities including materials are to be placed at least 10m distance from any water	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		body in order to minimize the impacts on water bodies and natural water flow. • Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage.		
Construction Activity	Noise from construction works	• Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the	Contractor	Environmental Consultant of PIU

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	- Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. - Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. - Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. - Construction materials should be covered properly while carrying in vehicles to the site.	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance)	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. - Records of every training must be kept at site. - All kinds of Child labour are completely prohibited in every site. - Every construction materials storage site will be well fenced by Tin and safety caution tape.		
Construction Activity	Traffic Management	- Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. - Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. - Local traffic police department should be contacted, if traffic problem becomes more complex.	Contractor	Environmental Consultant of PIU
Construction Activity	Increase in road accidents	Maintain safety measures during the movement of heavy machinery and equipment.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness.		
Construction Activity	Labor Base Camp: Conflicts with the local residents	• Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		consultation.		
Construction Activity	Labour related issues and grievances	• A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: • Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		subsequently sold to authorized recyclers. - Refueling areas and other fluid transfer areas will be imperviously paved. - Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. - Applicability of the Hazardous Waste Management Rules.		
Construction Activity	Health & Safety Risks: - The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. - Exposure to health	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. - Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. - Proper Signpost at any slippery areas will be ensured in construction site. - Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire.	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
	events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	• Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. • All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. • Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Pollution of water bodies	• Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • 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. • Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	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: • Pollution from waste materials. • Health & Safety risks to workers and local community.	• Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; • Ensure that all affected structures rehabilitated/compensated; • The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. • Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; • All imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. • The contractor must arrange the cancellation of all temporary services.	Contractor	Environmental Consultant of PIU/D&SC, district XEN.
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	• Preventative maintenance schedule should be followed. • Solid organic wastes should be stored in bins and/or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing	Contractor	Environmental Consultant of PIU, Union Parishad Member

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	- The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. - Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.	Contractor	Environmental Consultant of PIU
Operation & Maintenance	Road Safety. Impacts include: The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers.	Road safety issues can be minimized in following ways: - By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. - Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. Road signage and speed breaker for School (1+279) and road signage for graveyard (0+758) shall be installed/ constructed. - All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.	UE (Upazila Engineer)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries.			
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	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.

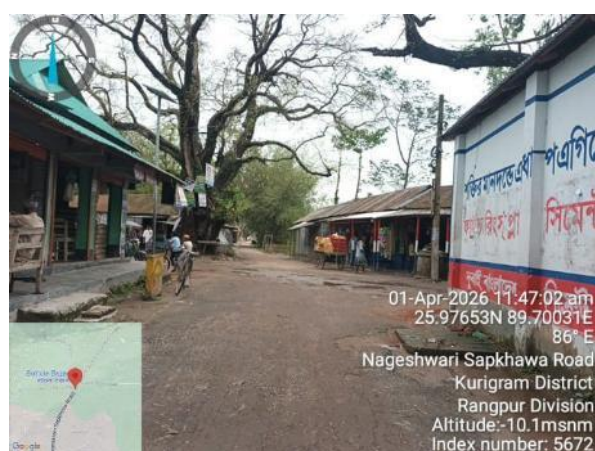
Cost of Environmental Enhancement Works in BOQ

Sl. no.	Description of item	Quantity	Unit price	Total amount
1.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	1272.00 Sq.m	@38.15 Tk. Per sqm	48,526.80
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	1060.0m	@ 2.56 BDT	2,713.60
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain	1 no.	LS @5000 Tk. Per box	5,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
	necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<u>Drinking Water Facilities</u> 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.	1 no.	LS @ Tk. 30,000	30,000
6.	<u>Traffic Management</u> 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.	1 no.	LS @ Tk. 15,000	15,000
7.	<u>Personal Protection Equipment for Workers</u> 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	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 Kurigram District (GCCR-15)

Sl. no.	Description of item	Quantity	Unit price	Total amount
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. [One person to be appointed for 19 roads]	Each	@ Tk. 35000	35,000
	Total amount for this road			241,886.12



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for **Ulipur bazar Rd.-Bozra hat Road**,
Road ID: 149944034

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

District: Kurigram

Upazila: Ulipur

Union: Bazra

Name of Community/Local Area: Moddha Bojra, Kalponi Bazar, Ulipur

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The sub-project is categorized as a village road development project with bituminous carpeting. For proper drainage of floodwater, Box Culvert, cross drain will be constructed in different chainage. Slope protection works will be implemented alongside of the road, these measures are proposed to protect the road embankment from erosion and to enhance the stability of the road structure, particularly during heavy rainfall and surface runoff conditions. To ensure slope protection and road stability, brick palisading walls and RCC retaining walls will be constructed where required. 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 8,640 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 1570m. 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
00-300	L		Hat Bazar Shop.
		R	Hat Bazar Shop.
300-600	L		House and trees.
		R	House and trees.
600-900	L		Hat Bazar
		R	Hat Bazar and School.
900-1200	L		House and agriculture land.
		R	House and agriculture land.

1200-1500	L		Agriculture land.
		R	House and agriculture land.
1500-1570	L		Agriculture land.
		R	Pond.



Starting Point of Ulipur bazar Rd.-Bozra hat 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.

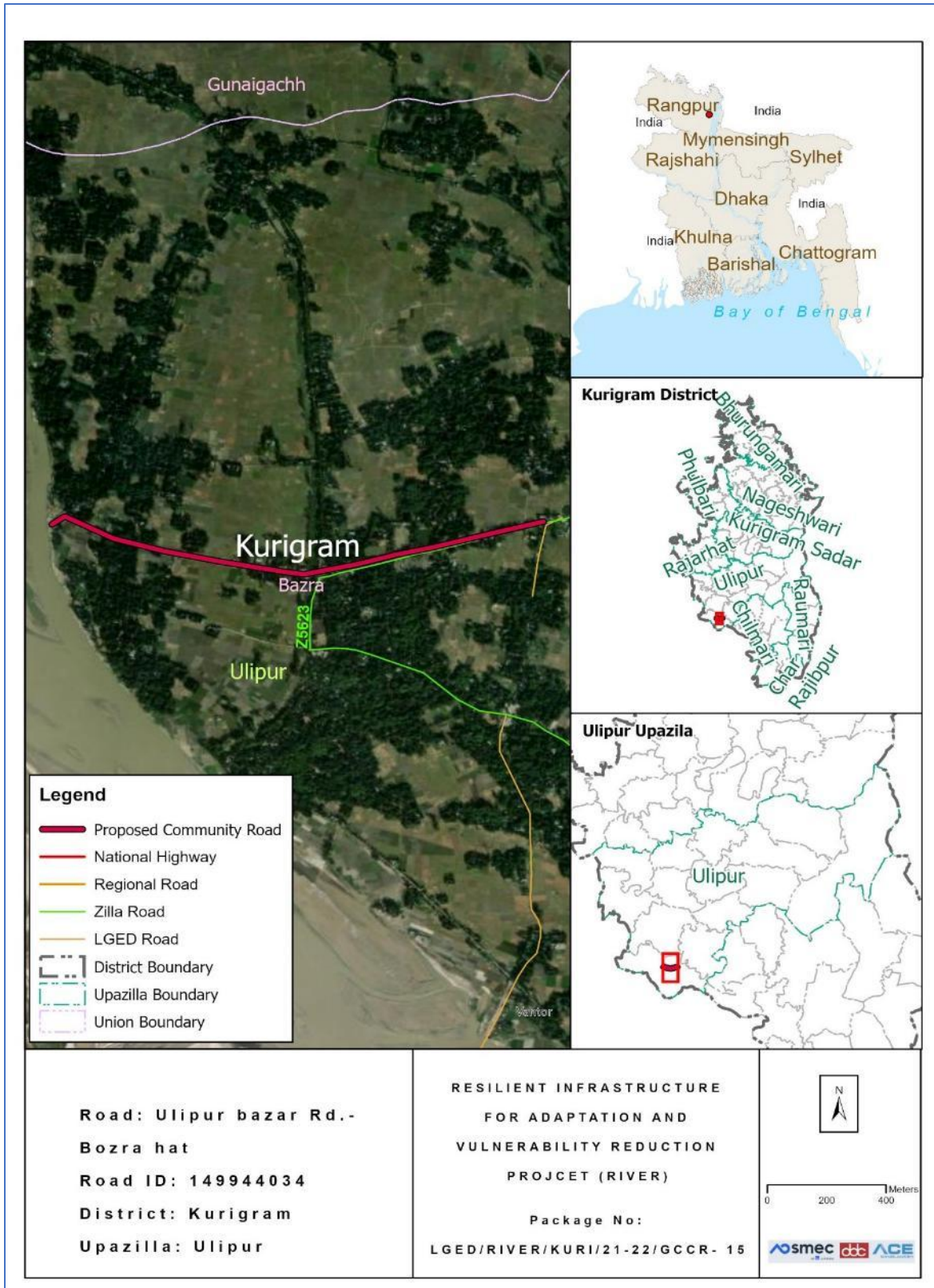
It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation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

Within the influence area of the subproject no historical sites were identified. The sub-project is located within Moddha Bojra, Kalponi Bazar, Ulipur villages. villages under Bazra Union. Several community features and assets are situated within approximately 100 meters of the project alignment. On the left side of the road, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right side, there are damaged structures, houses, ponds, trees, and an existing bridge. No significant religious or cultural heritage sites will be affected by the proposed sub-project. The project activities are not expected to cause any disturbance to the religious or cultural values of the local community.



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 involves of Bituminous Carpeting (BC) and earthen. According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 00 to Ch. 1570m.

Sub-project Location:

Important Features	
ID	149944034
District	Kurigram
Upazila	Ulipur
Union	Bazra
Total Chainage	1570m
Proposed Chainage	1570m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 25.59107 N Longitude: 89.599669 E
Road Ending Point Coordinates	Latitude: 25.590962 N Longitude: 89.584786 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 Moddha Bojra, Kalponi Bazar, Ulipur 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 features are located within approximately 100 meters of the project site. On the left side of the alignment, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right side, the surrounding features include damaged structures, houses, ponds, trees, and an existing bridge. The proposed sub-project is not expected to cause any disturbance to the religious or cultural values of the local community. Apart from the structures and features mentioned above, no environmentally sensitive, cultural, archaeological, or religious sites have been identified within the project influence area.

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 of Lalmonirhat District is located mainly in **alluvial, silty, sandy soil formations**. The soils of this area have developed primarily from **recent alluvial deposits carried by rivers such as the Teesta River and the Dharla River**. The soils developing from these riverine deposits tend to be **sandy loam to silty clay loams**, which are generally fertile and suitable for agricultural activities.

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

Groundwater is the primary source of potable water in the sub-project area. Residents rely on both shallow and deep tube wells to meet their daily domestic water needs. Deep tube wells in the area typically extend to a depth of approximately 180 feet. Shallow tube wells, however, often fail to provide sufficient water during the dry season. Deep groundwater in the sub-project area is fresh, potable, and free from arsenic. In contrast, water from the shallower aquifers contains high concentrations of iron, limiting its suitability for drinking. The depth of the deep, drinkable groundwater varies between 100 and 180 feet, according to a field survey conducted in 2019. Local residents primarily use water from deep tube wells for drinking and other domestic purposes. It is recommended that additional deep tube wells be installed to extract water from the confined aquifer to ensure a safe and reliable supply of potable water. Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681 μ s/cm, Fe-0.5 to 7.0 mg/l and As-Nil (Field Study Report, January 2026)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

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.

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 pre - existing drainage channel is found.
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: Ulipur bazar Rd.-Bozra hat (149944034)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs - All the safeguard documents will be disclosed to all relevant stakeholders. - People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	dust and noise)			
Pre-Construction Stage	Sanitation and water supply	- 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. - Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	- Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	• All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. • Construction facilities including materials are to be placed at least 10m distance from any water	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		body in order to minimize the impacts on water bodies and natural water flow. • Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage.		
Construction Activity	Noise from construction works	• Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the	Contractor	Environmental Consultant of PIU

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	- Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. - Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. - Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. - Construction materials should be covered properly while carrying in vehicles to the site.	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance)	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. - Records of every training must be kept at site. - All kinds of Child labour are completely prohibited in every site. - Every construction materials storage site will be well fenced by Tin and safety caution tape.		
Construction Activity	Traffic Management	- Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. - Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. - Local traffic police department should be contacted, if traffic problem becomes more complex.	Contractor	Environmental Consultant of PIU
Construction Activity	Increase in road accidents	Maintain safety measures during the movement of heavy machinery and equipment.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness.		
Construction Activity	Labor Base Camp: Conflicts with the local residents	• Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		consultation.		
Construction Activity	Labour related issues and grievances	• A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: • Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		subsequently sold to authorized recyclers. - Refueling areas and other fluid transfer areas will be imperviously paved. - Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. - Applicability of the Hazardous Waste Management Rules.		
Construction Activity	Health & Safety Risks: - The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. - Exposure to health	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. - Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. - Proper Signpost at any slippery areas will be ensured in construction site. - Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire.	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
	events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	• Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. • All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. • Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Pollution of water bodies	• Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • 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. • Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	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: • Pollution from waste materials. • Health & Safety risks to workers and local community.	• Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; • Ensure that all affected structures rehabilitated/compensated; • The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. • Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; • All imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. • The contractor must arrange the cancellation of all temporary services.	Contractor	Environmental Consultant of PIU/D&SC, district XEN.
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	• Preventative maintenance schedule should be followed. • Solid organic wastes should be stored in bins and/or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing	Contractor	Environmental Consultant of PIU, Union Parishad Member

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	- The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. - Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.	Contractor	Environmental Consultant of PIU
Operation & Maintenance	Road Safety. Impacts include: The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers.	Road safety issues can be minimized in following ways: - By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. - Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. Road signage and speed breaker for School (1+279) and road signage for graveyard (0+758) shall be installed/ constructed. - All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.	UE (Upazila Engineer)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries.			
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	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

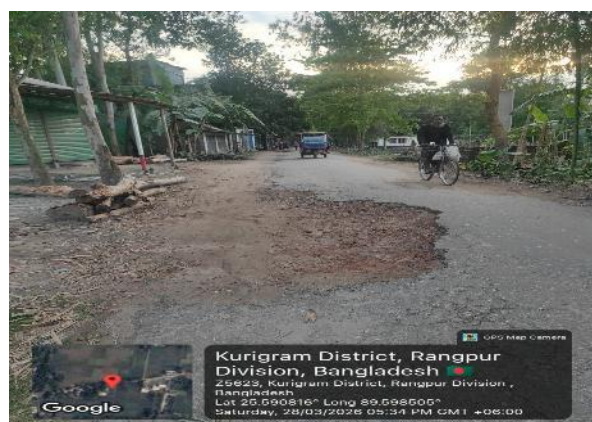
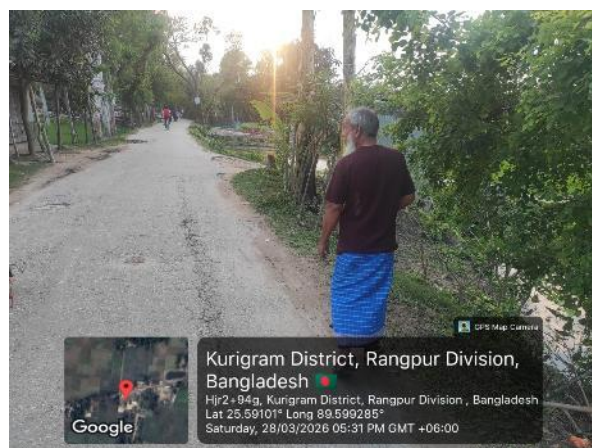
Sl. no.	Description of item	Quantity	Unit price	Total amount
1.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	1884.00 Sq.m	@38.15 Tk. Per sqm	71,874.60
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	1570.0m	@ 2.56 BDT	4,019.20
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain	1 no.	LS @5000 Tk. Per box	5,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
	necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<u>Drinking Water Facilities</u> 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.	1 no.	LS @ Tk. 30,000	30,000
6.	<u>Traffic Management</u> 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.	1 no.	LS @ Tk. 15,000	15,000
7.	<u>Personal Protection Equipment for Workers</u> 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	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 Kurigram District (GCCR-15)

Sl. no.	Description of item	Quantity	Unit price	Total amount
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. [One person to be appointed for 19 roads]	Each	@ Tk. 35000	35,000
	Total Bill of Environmental facilities for this road			266,539.52

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report of Community Roads for Kurigram District (GCCR-15)



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for Holokhana Sarkarpara Eidgha Field to Hemarkuti WAPDA Embankment **Road, Road ID:** 149525088

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

District: Kurigram

Upazila: Kurigram Sadar

Union: Holokhana

Name of Community/Local Area: Ververi, Hemerdushi

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The sub-project is categorized as a village road development project with bituminous carpeting. 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 5130 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 1.710m. 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	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Pond, local home, agriculture land, primary school (5.00m).
		R	Agriculture land, local home, pond, Bir Nibash House. (10.00m).
300-600	L		Local Home and treess.
		R	Bir Nibash (10.00m), local home, pond and trees.
600-900	L		Agriculture land, local home, and trees.
		R	Agriculture land, fish pond, Large waterbody.
900-1200	L		Agriculture land, local home, and trees.
		R	Agriculture land, a large water body, and trees.
1200-1500	L		Local home.

		R	Agriculture land.
1500-1710	L		Local home and trees.
		R	Agriculture land.



Starting Point of Holokhana Sarkararpara Eidgha Field to Hemarkuti WAPDA Embankment

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.

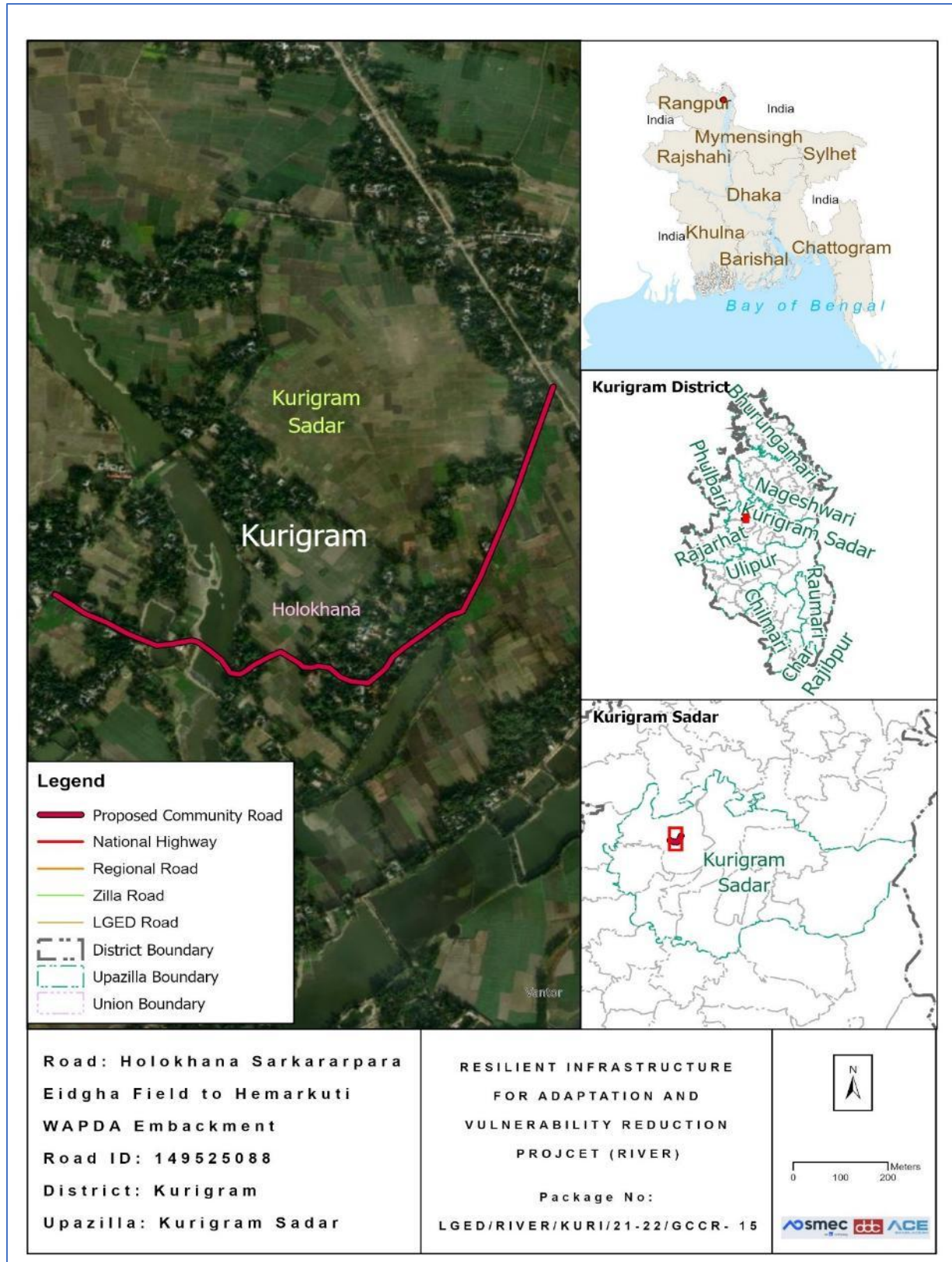
It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation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

Within the influence area of the subproject no historical sites were identified. The sub-project is located within Holokhana, Ververi and Hemerdushi villages under Holokhana Union, Ward No. 5 of Sadar Upazila in Kurigram District. Several community features and assets are situated within approximately 100 meters of the project alignment. On the left side of the road, these include damaged structures, ponds, trees, school, houses, agricultural land, and small shops. On the right side, there are damaged structures, houses, ponds, trees, and an existing bridge. No significant religious or cultural heritage sites will be affected by the proposed sub-project. The project activities are not expected to cause any disturbance to the religious or cultural values of the local community.



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 involves of Bituminous Carpeting (BC) and earthen. According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 00 to Ch. 1710m.

Sub-project Location:

Important Features	
ID	149525088
District	Kurigram
Upazila	Kurigram Sadar
Union	Holokhana
WARD	05
Total Chainage	1750m
Proposed Chainage	1710m
Road Type	Village Road (A)
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 25.85459 N Longitude: 89.62782 E
Road Ending Point Coordinates	Latitude: 25.85976 N Longitude: 89.63703 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 Ververi, Holokhana, Hemerkuti villages within one kilometer.
- 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. On the left side of the alignment, these include damaged structures, School, ponds, trees, houses, agricultural land, and small shops. On the right side, the surrounding features include damaged structures, houses, ponds, trees, and an existing bridge. The proposed sub-project is not expected to cause any disturbance to the religious or cultural values of the local community. Apart from the structures and features mentioned above, no environmentally sensitive, cultural, archaeological, or religious sites have been identified within the project influence area.

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 of Kurigram District is located mainly in **alluvial, silty, sandy soil formations**. The soils of this area have developed primarily from **recent alluvial deposits carried by rivers such as the Teesta River and the Dharla River**. The soils developing from these riverine deposits tend to be **sandy loam to silty clay loams**, which are generally fertile and suitable for agricultural activities.

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

Groundwater is the primary source of potable water in the sub-project area. Residents rely on both shallow and deep tube wells to meet their daily domestic water needs. Deep tube wells in the area typically extend to a depth of approximately 180 feet. Shallow tube wells, however, often fail to provide sufficient water during the dry season. Deep groundwater in the sub-project area is fresh, potable, and free from arsenic. In contrast, water from the shallower aquifers contains high concentrations of iron, limiting its suitability for drinking. The depth of the deep, drinkable groundwater varies between 100 and 180 feet, according to a field survey conducted in 2019. Local residents primarily use water from deep tube wells for drinking and other domestic purposes. It is recommended that additional deep tube wells be installed to extract water from the confined aquifer to ensure a safe and reliable supply of potable water.

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

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

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 pre - existing drainage channel is found.
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: Holokhana Sarkararpara Eidgha Field to Hemarkuti WAPDA Embankment, Road ID: 149525088

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs - All the safeguard documents will be disclosed to all relevant stakeholders. - People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	local people, generating dust and noise)			
Pre-Construction Stage	Sanitation and water supply	- 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. - Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	- Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. - Provision of waste bins/ cans, where appropriate,	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times. - Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. - Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. - Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	- All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. - Construction facilities including materials are to be placed at least 10m distance from any water	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		body in order to minimize the impacts on water bodies and natural water flow. • Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage.		
Construction Activity	Noise from construction works	• Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the	Contractor	Environmental Consultant of PIU

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	- Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. - Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. - Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. - Construction materials should be covered properly while carrying in vehicles to the site.	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance)	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. - Records of every training must be kept at site. - All kinds of Child labour are completely prohibited in every site. - Every construction materials storage site will be well fenced by Tin and safety caution tape.		
Construction Activity	Traffic Management	- Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. - Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. - Local traffic police department should be contacted, if traffic problem becomes more complex.	Contractor	Environmental Consultant of PIU
Construction Activity	Increase in road accidents	Maintain safety measures during the movement of heavy machinery and equipment.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness.		
Construction Activity	Labor Base Camp: Conflicts with the local residents	• Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		consultation.		
Construction Activity	Labour related issues and grievances	• A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: • Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		area and subsequently sold to authorized recyclers. - Refueling areas and other fluid transfer areas will be imperviously paved. - Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. - Applicability of the Hazardous Waste Management Rules.		
Construction Activity	Health & Safety Risks: 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.	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. - Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. - Proper Signpost at any slippery areas will be ensured in construction site.	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. - Adequate quantities of drinking water will be available at all Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	• Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		erosive potential of surface water flows elsewhere. Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.		
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage: - Pollution from waste materials. - Health & Safety risks to workers and local community.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - Ensure that all affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. - Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; - All imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. - The contractor must arrange the cancellation of all temporary services.	Contractor	Environmental Consultant of PIU/D&SC, district XEN.
Construction activity	Odours and pollution caused by leaking latrines and faecal	- Preventative maintenance schedule should be followed. - Solid organic wastes should be stored in bins and/	Contractor	Environmental Consultant of PIU, Union

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	sludge, and solid wastes impacting surrounding water bodies, flora and fauna	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.		Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	- The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. - Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.	Contractor	Environmental Consultant of PIU
Operation & Maintenance	Road Safety. Impacts include: The increased vehicular movement and speed may trigger road safety issues like traffic	Road safety issues can be minimized in following ways: - By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. - Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. Road signage and	UE (Upazila Engineer)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	accidents. The accidents may also be due to tiredness of drivers. 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.	speed breaker for School (1+279) and road signage for graveyard (0+758) shall be installed/ constructed. All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	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

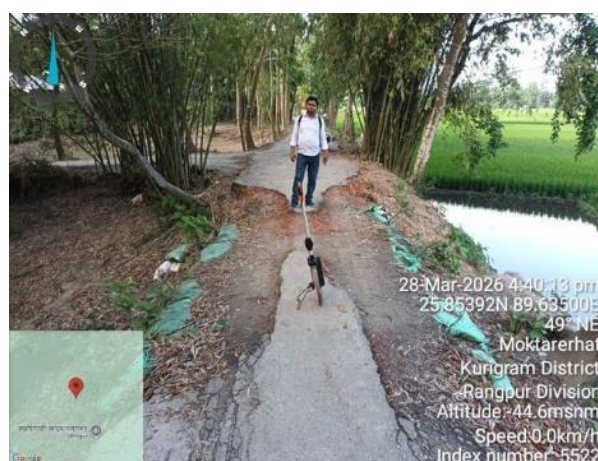
Sl. no.	Description of item	Quantity	Unit price	Total amount
1.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	3456.00 Sq.m	@38.15 Tk. Per sqm	78,283.80
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	1710.0m	@ 2.56 BDT	4,377.60
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain	1 no.	LS @5000 Tk. Per box	5,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
	necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<u>Drinking Water Facilities</u> 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.	1 no.	LS @ Tk. 30,000	30,000
6.	<u>Traffic Management</u> 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.	1 no.	LS @ Tk. 15,000	15,000
7.	<u>Personal Protection Equipment for Workers</u> 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	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 Kurigram District (GCCR-15)

Sl. no.	Description of item	Quantity	Unit price	Total amount
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. <u>[One person to be appointed for 8 roads]</u>	Each	@ Tk. 35000	35,000
	Total Bill of Environmental facilities for this road			273,307.12

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report of Community Roads for Kurigram District (GCCR-15)



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for Bancharam-BWDB Embankment, **Road ID:** 149525012

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

District: Kurigram

Upazila: Sadar

Union: Mogalbasha

Name of Community/Local Area: Bancharam, Nidhiram

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The sub-project is categorized as a village road development project with bituminous carpeting. 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 3285 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 1095m. 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	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Primary School (70m), Madrasah and local home.
		R	Faruq Shop, local home, Agriculture land, and trees.
300-600	L		Local home, agriculture land, mosque, madrasah and trees.
		R	Local home, agriculture land, and trees.
600-900	L		Chairman para, local home, mosque, and trees.
		R	Agriculture land, local home, shop, and trees.
900-1095			Agriculture land, local home, shop, and trees.



Starting Point of Bancharam-BWDB 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 (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

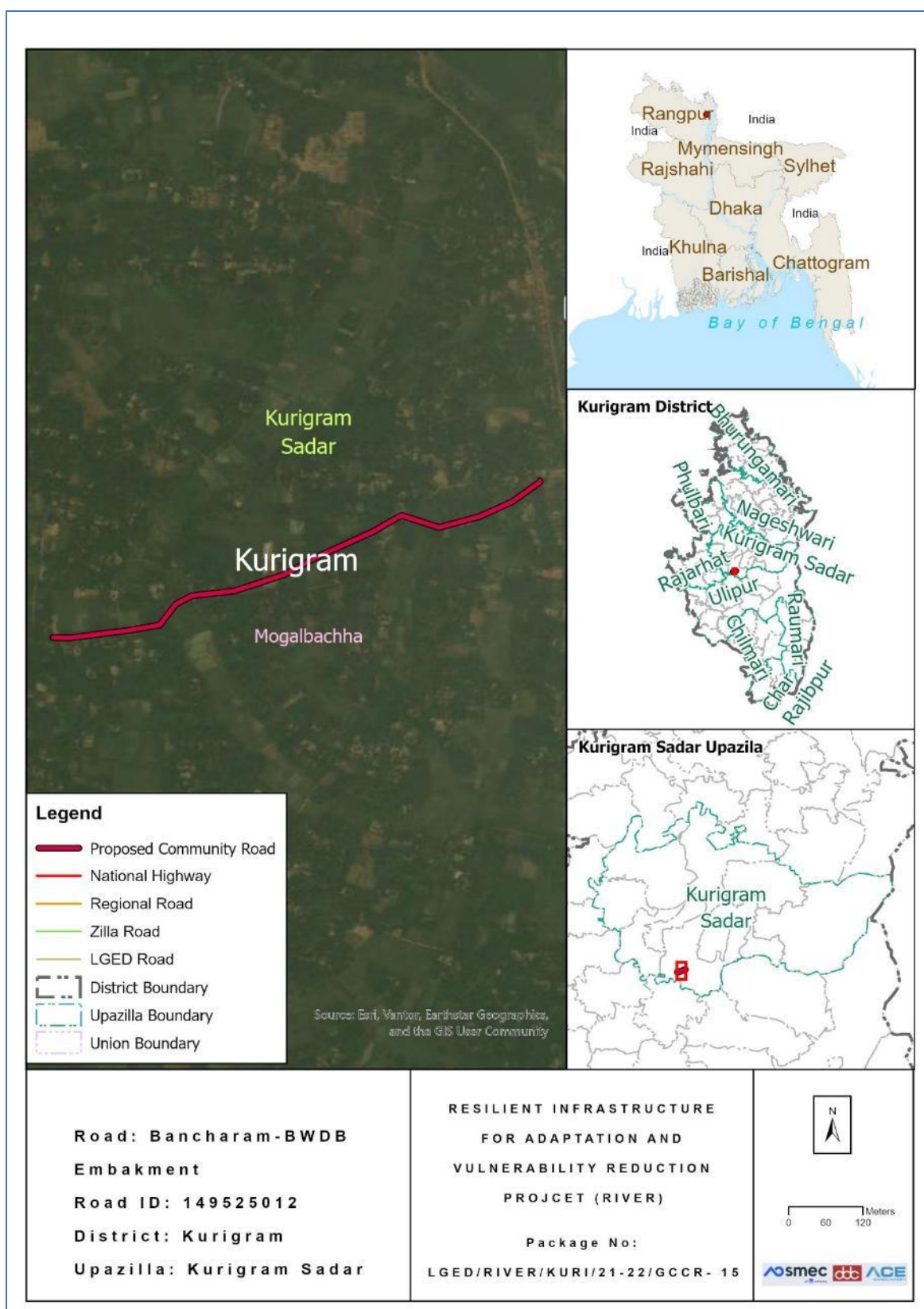
brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation of this project since runoff from higher grounds are also a concerning matter during rainy season. The proposed Sub-project area for the construction included flat areas and moderate 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:

Within the influence area of the subproject no historical sites were identified. The sub-project is located within Bancharam, Nidhiram villages under Mogalbasha Union, Ward No. 3 of Sadar Upazila in Kurigram District. Several community features and assets are situated within approximately 100 meters of the project alignment. On the left side of the road, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right side, there are damaged structures, houses, ponds, trees, and an existing bridge. No significant religious or cultural heritage sites will be affected by the proposed sub-project. The project activities are not expected to cause any disturbance to the religious or cultural values of the local community.



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 involves of Bituminous Carpeting (BC) and earthen. According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 00 to Ch. 1095m.

Sub-project Location:

Important Features	
ID	149525012
District	Kurigram
Upazila	Sadar
Union	Magalbasha
WARD	03
Total Chainage	2020m
Proposed Chainage	1095m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 25.76953 N Longitude: 98.64840 E
Road Ending Point Coordinates	Latitude: 25.77177 N Longitude: 89.65538 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 Bancharam, Nidhiram villages within one kilometer.
- 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. On the left side of the alignment, these include damaged structures, ponds, primary school, trees, houses, agricultural land, and small shops. On the right side, the surrounding features include damaged structures, houses, ponds, trees. The proposed sub-project is not expected to cause any disturbance to the religious or cultural values of the local community. Apart from the structures and features mentioned above, no environmentally sensitive, cultural, archaeological, or religious sites have been identified within the project influence area.

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 of Kurigram District is located mainly in alluvial, silty, sandy soil formations. The soils of this area have developed primarily from recent alluvial deposits carried by rivers such as the Teesta River and the Dharla River. The soils developing from these riverine deposits tend to be sandy loam to silty clay loams, which are generally fertile and suitable for agricultural activities.
Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH): Groundwater is the primary source of potable water in the sub-project area. Residents rely on both shallow and deep tube wells to meet their daily domestic water needs. Deep tube wells in the area typically extend to a depth of approximately 180 feet. Shallow tube wells, however, often fail to provide sufficient water during the dry season. Deep groundwater in the sub-project area is fresh, potable, and free from arsenic. In contrast, water from the shallower aquifers contains high concentrations of iron, limiting its suitability for drinking. The depth of the deep, drinkable groundwater varies between 100 and 180 feet, according to a field survey conducted in 2019. Local residents primarily use water from deep tube wells for drinking and other domestic purposes. It is recommended that additional deep tube wells be installed to extract water from the confined aquifer to ensure a safe and reliable supply of potable water. Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (Field Study Report, January 2026)
Status of wildlife movement: N/A (None of the information was found about the wildlife movement in or across the area)
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 pre - existing drainage channel is found.
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: Bancharam-BWDB Embankment, Road ID: 149525012

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs - All the safeguard documents will be disclosed to all relevant stakeholders. - People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	dust and noise)			
Pre-Construction Stage	Sanitation and water supply	- 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. - Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	- Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	• All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. • Construction facilities including materials are to be placed at least 10m distance from any water	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		body in order to minimize the impacts on water bodies and natural water flow. • Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage.		
Construction Activity	Noise from construction works	• Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works.		
Construction Activity	Dust	- Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. - Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. - Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. - Construction materials should be covered properly while carrying in vehicles to the site.	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance)	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. - Records of every training must be kept at site. - All kinds of Child labour are completely prohibited in every site. - Every construction materials storage site will be well fenced by Tin and safety caution tape.		
Construction Activity	Traffic Management	- Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. - Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. - Local traffic police department should be contacted, if traffic problem becomes more complex.	Contractor	Environmental Consultant of PIU
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement of heavy machinery and equipment. - Proper signage to be displayed at major junctions; and road diversions and closures to be	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness.		
Construction Activity	Labor Base Camp: Conflicts with the local residents	• Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation.	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Labour related issues and grievances	• A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: • Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		area and subsequently sold to authorized recyclers. - Refueling areas and other fluid transfer areas will be imperviously paved. - Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. - Applicability of the Hazardous Waste Management Rules.		
Construction Activity	Health & Safety Risks: 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.	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. - Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. - Proper Signpost at any slippery areas will be ensured in construction site.	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. - Adequate quantities of drinking water will be available at all Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	• Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		erosive potential of surface water flows elsewhere. Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.		
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage: - Pollution from waste materials. - Health & Safety risks to workers and local community.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - Ensure that all affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. - Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; - All imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. - The contractor must arrange the cancellation of all temporary services.	Contractor	Environmental Consultant of PIU/D&SC, district XEN.
Construction activity	Odours and pollution caused by leaking	Preventative maintenance schedule should be followed.	Contractor	Environmental Consultant of

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	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.		PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	- The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. - Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.	Contractor	Environmental Consultant of PIU
Operation & Maintenance	Road Safety. Impacts include: The increased vehicular movement and speed may	Road safety issues can be minimized in following ways: - By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. - Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at	UE (Upazila Engineer)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers. Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries.	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. All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	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.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	1314.0Sq.m	@38.15 Tk. Per sqm	50,129.10
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	1095.0m	@ 2.56 BDT	2,803.20
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain	1 no.	LS @5000 Tk. Per box	5,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
	necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<u>Drinking Water Facilities</u> 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.	1 no.	LS @ Tk. 30,000	30,000
6.	<u>Traffic Management</u> 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.	1 no.	LS @ Tk. 15,000	15,000
7.	<u>Personal Protection Equipment for Workers</u> 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	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 Kurigram District (GCCR-15)

Sl. no.	Description of item	Quantity	Unit price	Total amount
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. <u>[One person to be appointed for 8 roads]</u>	Each	@ Tk. 35000	35,000
	Total Bill of Environmental facilities for this road			243,578.02



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for Neferdarga H/O Aranda Kumar,
Road ID: 149525001

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

District: Kurigram

Upazila: Sadar

Union: Kathal Bari

Name of Community/Local Area: Protap, Nefardarga

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The sub-project is categorized as a village road development project with bituminous carpeting. 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 2400 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 800m. 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	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Local home and trees.
		R	Local home and trees.
300-600	L		Local home and trees.
		R	Local home, agriculture land, trees and pond.
600-800	L		Local home, agriculture land, trees and pond
		R	Local home, pond and trees.



Starting Point of Neferdarga H/O Aranda Kumar

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,

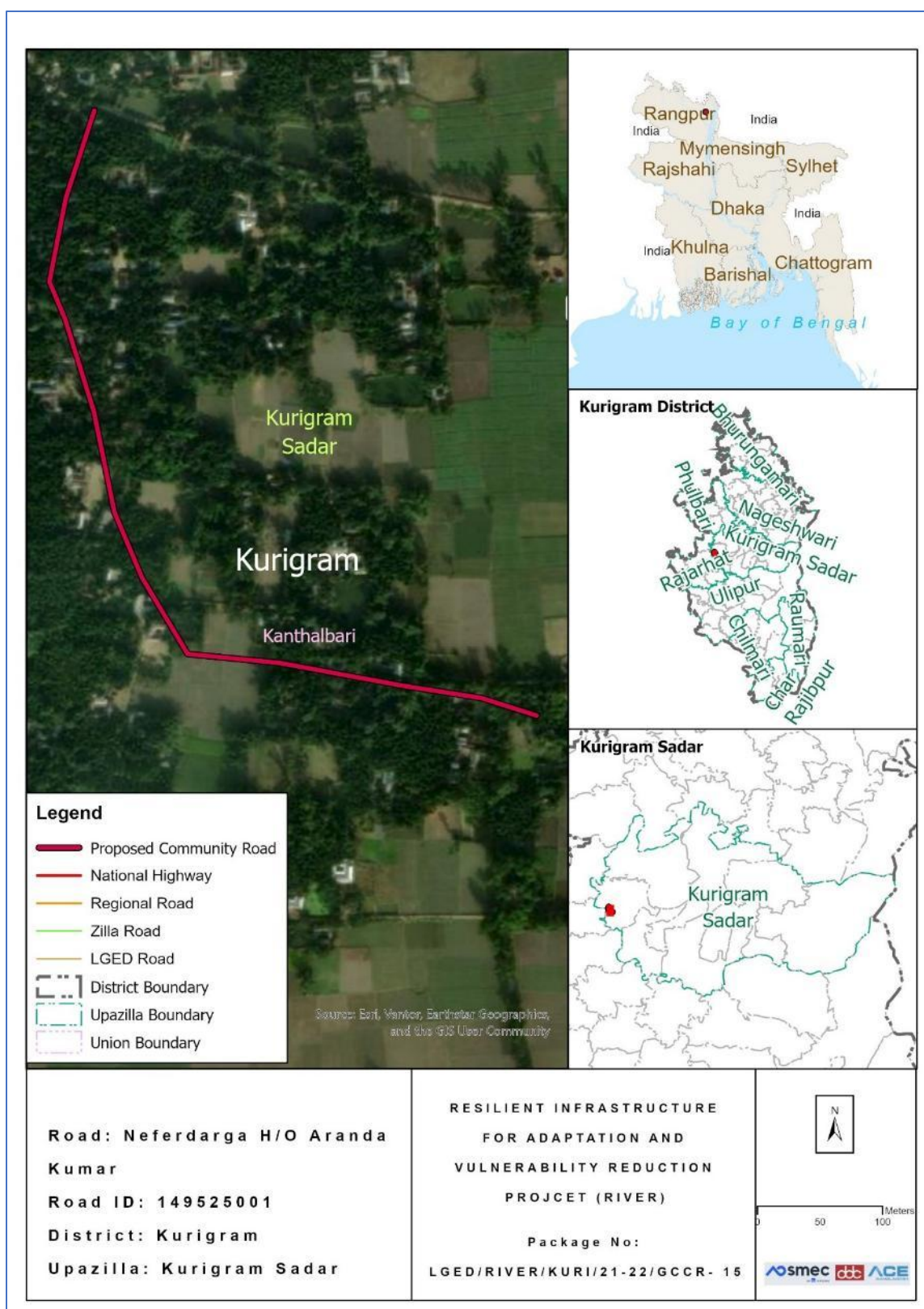
and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects.

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:

Within the influence area of the subproject no historical sites were identified. The sub-project is located within Protap, Nefardarga villages under Kathal bari Union, Ward No. 5 of Sadar Upazila in Kurigram District. Several community features and assets are situated within approximately 100 meters of the project alignment. On the left side of the road, these include damaged structures, trees, houses, agricultural land. On the right side, there are damaged structures, houses, trees. No significant religious or cultural heritage sites will be affected by the proposed sub-project. The project activities are not expected to cause any disturbance to the religious or cultural values of the local community.



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 involves of Bituminous Carpeting (BC) and earthen. According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 00 to Ch. 2880m.

Sub-project Location:

Important Features	
ID	149525001
District	Kurigram
Upazila	Sadar
Union	Kathalbari
WARD	05
Total Chainage	800m
Proposed Chainage	800m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 25.82603 N Longitude: 89.58726 E
Road Ending Point Coordinates	Latitude: 25.82163 N Longitude: 89.59047 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 Protap, Nefardarga villages within one kilometer.
- 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. On the left side of the alignment, these include damaged structures, trees, houses, agricultural land. On the right side, the surrounding features include damaged structures, houses, trees. The proposed sub-project is not expected to cause any disturbance to the religious or cultural values of the local community. Apart from the structures and features mentioned above, no environmentally sensitive, cultural, archaeological, or religious sites have been identified within the project influence area.

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 of Kurigram District is located mainly in **alluvial, silty, sandy soil formations**. The soils of this area have developed primarily from **recent alluvial deposits carried by rivers such as the Teesta River and the Dharla River**. The soils developing from these riverine deposits tend to be **sandy loam to silty clay loams**, which are generally fertile and suitable for agricultural activities.

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

Groundwater is the primary source of potable water in the sub-project area. Residents rely on both shallow and deep tube wells to meet their daily domestic water needs. Deep tube wells in the area typically extend to a depth of approximately 180 feet. Shallow tube wells, however, often fail to provide sufficient water during the dry season. Deep groundwater in the sub-project area is fresh, potable, and free from arsenic. In contrast, water from the shallower aquifers contains high concentrations of iron, limiting its suitability for drinking. The depth of the deep, drinkable groundwater varies between 100 and 180 feet, according to a field survey conducted in 2019. Local residents primarily use water from deep tube wells for drinking and other domestic purposes. It is recommended that additional deep tube wells be installed to extract water from the confined aquifer to ensure a safe and reliable supply of potable water.

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

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

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.

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 pre - existing drainage channel is found.
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: Neferdarga H/O Aranda Kamar, Road ID: 149525001

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs - All the safeguard documents will be disclosed to all relevant stakeholders. - People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating dust and noise)	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Sanitation and water supply	- 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. - Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	- Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	• All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. • Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow. • Tubewell location wherever required to install, within the construction site is not near to any	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage.		
Construction Activity	Noise from construction works	• Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works.	Contractor	Environmental Consultant of PIU
Construction Activity	Dust	• Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter),	Contractor	Environmental Consultant of

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. - Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. - Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. - Construction materials should be covered properly while carrying in vehicles to the site.		PIU
Construction Activity	Safety Issues	- Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance) - Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. - Records of every training must be kept at site. - All kinds of Child labour are completely prohibited in every site. - Every construction materials storage site will be well fenced by Tin and safety caution tape.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Traffic Management	- Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. - Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. - Local traffic police department should be contacted, if traffic problem becomes more complex.	Contractor	Environmental Consultant of PIU
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement of heavy machinery and equipment. - Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. - Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) - Local community will be trained up on traffic management and awareness.	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and	Contractor	Social Development Specialist and

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation.		Gender Specialist of PIU
Construction Activity	Labour related issues and grievances	• A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
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: - Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site. - The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. - Refueling areas and other fluid transfer areas will be imperviously paved. - Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. - Applicability of the Hazardous Waste Management Rules.	Contractor	Environmental Consultant of PIU
Construction Activity	Health & Safety Risks: The potential for exposure to safety	All construction equipment will be properly inspected timely.	Contractor	Environmental Consultant as well as Social

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. - Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. - Proper Signpost at any slippery areas will be ensured in construction site. - Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat		Development and Gender Specialists of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		stroke, and dehydration. Written records of this awareness training shall be kept on site. - Adequate quantities of drinking water will be available at all Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	- Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) - The material stockpile sites shall be far away from surface water bodies and areas prone to surface	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. - The overall slope of the work areas and stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.		
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage: Pollution from waste materials.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - Ensure that all affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. - Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; - All imported materials are to be removed and the area shall be re-vegetated/re-grassed as per	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	Health & Safety risks to workers and local community.	specification that forms part of this document. The contractor must arrange the cancellation of all temporary services.		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Solid organic wastes should be stored in bins and/or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time.	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	- The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. - Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Operation & Maintenance	Road Safety. Impacts include: - The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers. - Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries.	Road safety issues can be minimized in following ways: - By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. - Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. Road signage and speed breaker for School (1+279) and road signage for graveyard (0+758) shall be installed/ constructed. - All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.	UE (Upazila Engineer)	District Executive Engineer, LGED
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	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.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	960.0 Sq.m	@38.15 Tk. Per sqm	36,624.00
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	800m	@ 2.56 BDT	2048.00
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain	1 no.	LS @5000 Tk. Per box	5,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
	necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<u>Drinking Water Facilities</u> 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.	1 no.	LS @ Tk. 30,000	30,000
6.	<u>Traffic Management</u> 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.	1 no.	LS @ Tk. 15,000	15,000
7.	<u>Personal Protection Equipment for Workers</u> 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	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 Kurigram District (GCCR-15)

Sl. no.	Description of item	Quantity	Unit price	Total amount
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. [One person to be appointed for 19 roads]	Each	@ Tk. 35000	35,000
	Total Bill of Environmental facilities for this road			229,317.92



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for Boribari Mouzar Asmoth Alir Near pocca Road to Modhokhamar Holkhana GPS, **Road ID:** 149525200

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

District: Kurigram

Upazila: Sadar

Union: Holokhana

Name of Community/Local Area: Boraibari, Suvarkuti

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The sub-project is categorized as a village road development project with bituminous carpeting. For proper drainage of flood water one **Box Culvert** (6.5 m × 3.70 m) at chainage 367m will also be renovated if necessary. To ensure slope protection and road stability, brick palisading walls and RCC retaining walls will be constructed where required. 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 2,580sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 860m. 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	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Agriculture land and tress.
		R	Madrasah, agriculture land, trees and pond.
300-600	L		Agriculture land, local home, trees and pond.
		R	Agriculture land, local homes, and pond.
600-860	L		Local home, pond, and trees.
		R	Agriculture land, trees, and pond.



**Starting Point of Boribari Mouzar Asmoth Alir Near pocca Road to Modhokhamar Holkhana
GPS 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

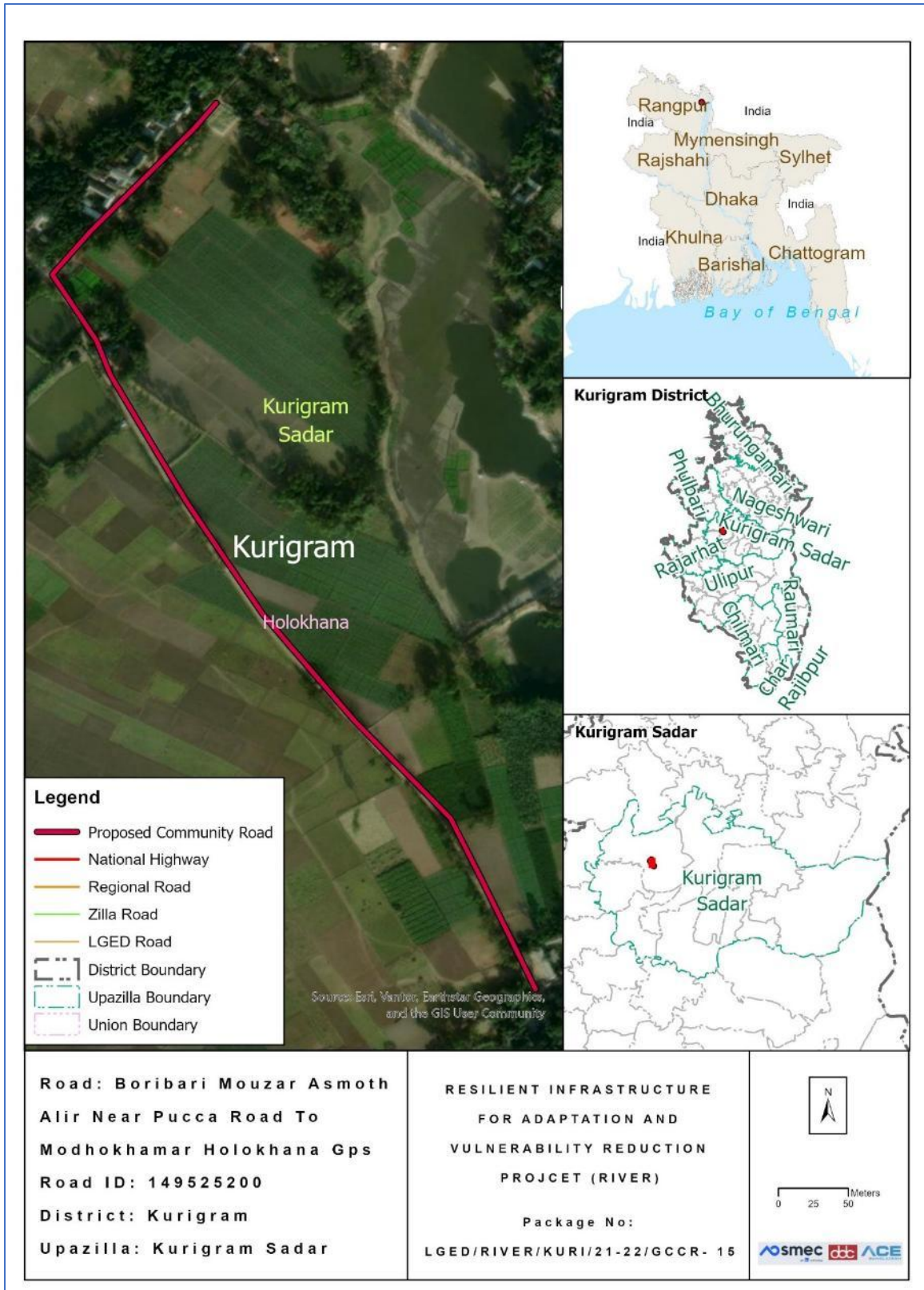
brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation of this project since runoff from higher grounds are also a concerning matter during rainy season. The proposed Sub-project area for the construction included flat areas and moderate 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:

Within the influence area of the subproject no historical sites were identified. The sub-project is located within Suvarkuti, ververi, Boraibari villages under Holokhana Union, Ward No. 6 of Sadar Upazila in Kurigram District. Several community features and assets are situated within approximately 100 meters of the project alignment. On the left side of the road, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right side, there are damaged structures, houses, ponds, trees, and an existing bridge. No significant religious or cultural heritage sites will be affected by the proposed sub-project. The project activities are not expected to cause any disturbance to the religious or cultural values of the local community.



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 involves of Bituminous Carpeting (BC) and earthen. According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 00 to Ch. 2880m.

Sub-project Location:

Important Features	
ID	149525200
District	Kurigram
Upazila	Sadar
Union	Holokhana
WARD	06
Total Chainage	1000m
Proposed Chainage	860m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 25.84730 N Longitude: 89.63122 E
Road Ending Point Coordinates	Latitude: 25.85355 N Longitude: 89.62767 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 Boraibari, Suvarkuti and some other villages within one kilometer.
- 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. On the left side of the alignment, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right side, the surrounding features include damaged structures, houses, ponds, trees. The proposed sub-project is not expected to cause any disturbance to the religious or cultural values of the local community. Apart from the structures and features mentioned above, no environmentally sensitive, cultural, archaeological, or religious sites have been identified within the project influence area.

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 of Lalmonirhat District is located mainly in **alluvial, silty, sandy soil formations**. The soils of this area have developed primarily from **recent alluvial deposits carried by rivers such as the Teesta River and the Dharla River**. The soils developing from these riverine deposits tend to be **sandy loam to silty clay loams**, which are generally fertile and suitable for agricultural activities.

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

Groundwater is the primary source of potable water in the sub-project area. Residents rely on both shallow and deep tube wells to meet their daily domestic water needs. Deep tube wells in the area typically extend to a depth of approximately 180 feet. Shallow tube wells, however, often fail to provide sufficient water during the dry season. Deep groundwater in the sub-project area is fresh, potable, and free from arsenic. In contrast, water from the shallower aquifers contains high concentrations of iron, limiting its suitability for drinking. The depth of the deep, drinkable groundwater varies between 100 and 180 feet, according to a field survey conducted in 2019. Local residents primarily use water from deep tube wells for drinking and other domestic purposes. It is recommended that additional deep tube wells be installed to extract water from the confined aquifer to ensure a safe and reliable supply of potable water.

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

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

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.

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 pre - existing drainage channel is found.
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: Boribari Mouzar Asmoth Alir Near pocca Road to Modhokhamar Holkhana GPS, Road ID: 149525200

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs - All the safeguard documents will be disclosed to all relevant stakeholders. - People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	dust and noise)			
Pre-Construction Stage	Sanitation and water supply	- 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. - Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	- Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	• All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. • Construction facilities including materials are to be placed at least 10m distance from any water	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		body in order to minimize the impacts on water bodies and natural water flow. • Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage.		
Construction Activity	Noise from construction works	• Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the	Contractor	Environmental Consultant of PIU

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	- Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. - Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. - Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. - Construction materials should be covered properly while carrying in vehicles to the site.	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance)	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. - Records of every training must be kept at site. - All kinds of Child labour are completely prohibited in every site. - Every construction materials storage site will be well fenced by Tin and safety caution tape.		
Construction Activity	Traffic Management	- Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. - Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. - Local traffic police department should be contacted, if traffic problem becomes more complex.	Contractor	Environmental Consultant of PIU
Construction Activity	Increase in road accidents	Maintain safety measures during the movement of heavy machinery and equipment.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness.		
Construction Activity	Labor Base Camp: Conflicts with the local residents	• Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		consultation.		
Construction Activity	Labour related issues and grievances	• A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: • Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		subsequently sold to authorized recyclers. • Refueling areas and other fluid transfer areas will be imperviously paved. • Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. • Applicability of the Hazardous Waste Management Rules.		
Construction Activity	Health & Safety Risks: • The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. • Exposure to health	• All construction equipment will be properly inspected timely. • The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. • Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. • Proper Signpost at any slippery areas will be ensured in construction site. • Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire.	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
	events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	• Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. • All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. • Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	• Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • 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.	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.		
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage: - Pollution from waste materials. - Health & Safety risks to workers and local community.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - Ensure that all affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. - Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; - All imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. - The contractor must arrange the cancellation of all temporary services.	Contractor	Environmental Consultant of PIU/D&SC, district XEN.
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding	- Preventative maintenance schedule should be followed. - Solid organic wastes should be stored in bins and/or skips and emptied regularly at a designated waste disposal area away from the camp site. If	Contractor	Environmental Consultant of PIU, Union Parishad Member

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	water bodies, flora and fauna	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.		
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	- The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. - Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.	Contractor	Environmental Consultant of PIU
Operation & Maintenance	Road Safety. Impacts include: The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be	Road safety issues can be minimized in following ways: - By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. - Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. Road signage and speed breaker for School (1+279) and road signage for graveyard (0+758) shall be installed/ constructed.	UE (Upazila Engineer)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	due to tiredness of drivers. 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.	All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	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.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	1032.00 Sq.m	@38.15 Tk. Per sqm	39,370.80
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	860m	@ 2.56 BDT	2,201.60
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain	1 no.	LS @5000 Tk. Per box	5,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
	necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<u>Drinking Water Facilities</u> 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.	1 no.	LS @ Tk. 30,000	30,000
6.	<u>Traffic Management</u> 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.	1 no.	LS @ Tk. 15,000	15,000
7.	<u>Personal Protection Equipment for Workers</u> 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	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 Kurigram District (GCCR-15)

Sl. no.	Description of item	Quantity	Unit price	Total amount
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. <u>[One person to be appointed for 19 roads]</u>	Each	@ Tk. 35000	35,000
	Total Bill of this road			232,218.12



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for Khamar para RHD road Bot tola to Bamandanga UP office, **Road ID:** 149615078

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

District: Kurigram

Upazila: Nageshwari

Union: Bamandanga

Name of Community/Local Area: Bottola, Kamarpar

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The sub-project is categorized as a village road development project with bituminous carpeting. For proper drainage of floodwater, 4 new U-drain at chainage 87, 391, 1342, 1667 m will be renovated as required 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 6270 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 2090m. 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	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Chainage 00m_ Shop.
		R	Chainage 0.00m_ Pond, chainage 61.00m house.
300-600	L		Chainage 370m, house, chainage-425m- Sonatoli pukurpar gram samiti, chainage- 480m- house, chainage-500 m-pond, chainage-560m- pond, chainage-580m- house.
		R	Agricultural land
600-900	L		Chainage 890m, pond.
		R	Agricultural land
900-1200	L		Chainage 1050m, house.
		R	Chainage 1136m-house, chainage 1183m- pond.

1200-1500	L		Chainage 1268m- Eidgah Field, chainage 1424m pond.
		R	Chainage 1348m- Mosque.
1500-1800	L		Chainage 1670m- house, chainage 1730m- pond.
		R	Chainage 1840m- Purbo Volhat Gram Samiti, chainage 1865m- pond.
1800-2090	L		Agriculture land, local home, shop, and trees.
		R	Chainage 1985m- KUR-005 Khamarpatra Nabish GPS (100m distance), chainage 1990m- pond.



Starting Point of Khamar para RHD road Bot tola to Bamandanga UP office Road

Overall Comments

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

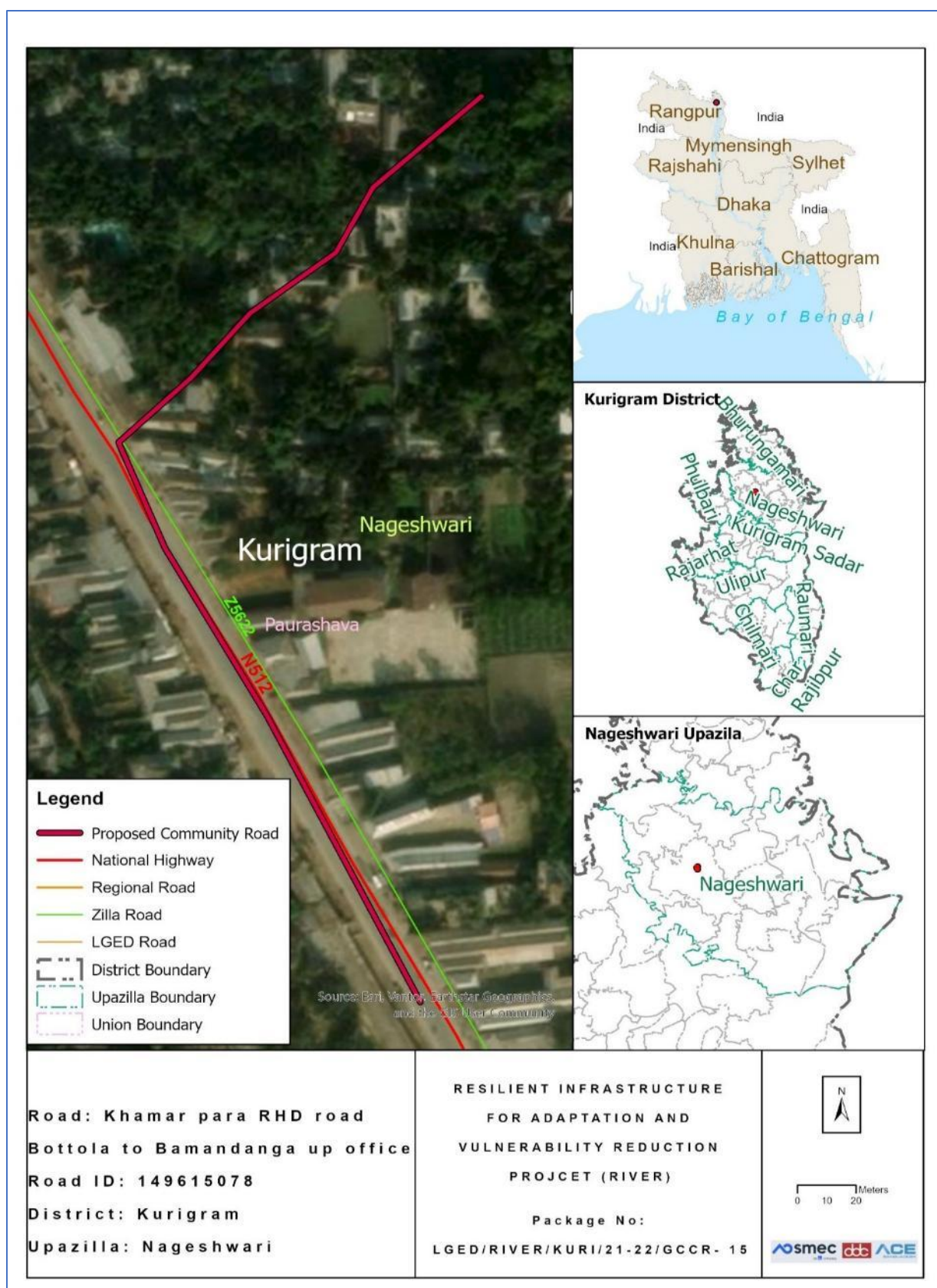
It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation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

Within the influence area of the subproject no historical sites were identified. The sub-project is located within Kamarpara, Bottola villages under Bamandanga Union, Ward No. 4 of Nageswari Upazila in Kurigram District. Several community features and assets are situated within approximately 100 meters of the project alignment. On the left side of the road, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right side, there are damaged structures, houses, ponds, trees, and an existing bridge. No significant religious or cultural heritage sites will be affected by the proposed sub-project. The project activities are not expected to cause any disturbance to the religious or cultural values of the local community.



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 involves of Bituminous Carpeting (BC) and earthen. According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 00 to Ch. 2+090m.

Sub-project Location:

Important Features	
ID	149615078
District	Kurigram
Upazila	Nageshwari
Union	Bamandanga
WARD	4
Total Chainage	2090m
Proposed Chainage	2090m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 25.97970 N Longitude: 89.68653 E
Road Ending Point Coordinates	Latitude: 25.97663 N Longitude: 89.70042 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 Kamarpara, Bottola villages and some other villages within one kilometer.
- 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. On the left side of the alignment, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right side, the surrounding features include damaged structures, houses, ponds, trees, and an existing bridge. The proposed sub-project is not expected to cause any disturbance to the religious or cultural values of the local community. Apart from the structures and features mentioned above, no environmentally sensitive, cultural, archaeological, or religious sites have been identified within the project influence area.

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 of Kurigram District is located mainly in **alluvial, silty, sandy soil formations**. The soils of this area have developed primarily from **recent alluvial deposits carried by rivers such as the Teesta River and the Dharla River**. The soils developing from these riverine deposits tend to be **sandy loam to silty clay loams**, which are generally fertile and suitable for agricultural activities.

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

Groundwater is the primary source of potable water in the sub-project area. Residents rely on both shallow and deep tube wells to meet their daily domestic water needs. Deep tube wells in the area typically extend to a depth of approximately 180 feet. Shallow tube wells, however, often fail to provide sufficient water during the dry season. Deep groundwater in the sub-project area is fresh, potable, and free from arsenic. In contrast, water from the shallower aquifers contains high concentrations of iron, limiting its suitability for drinking. The depth of the deep, drinkable groundwater varies between 100 and 180 feet, according to a field survey conducted in 2019. Local residents primarily use water from deep tube wells for drinking and other domestic purposes. It is recommended that additional deep tube wells be installed to extract water from the confined aquifer to ensure a safe and reliable supply of potable water.

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

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

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.

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 pre - existing drainage channel is found.
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: Khamar para RHD road Bot tola to Bamandanga UP office, Road ID: 149615078

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs - All the safeguard documents will be disclosed to all relevant stakeholders. - People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	dust and noise)			
Pre-Construction Stage	Sanitation and water supply	- 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. - Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	- Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	• All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. • Construction facilities including materials are to be placed at least 10m distance from any water	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		body in order to minimize the impacts on water bodies and natural water flow. • Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage.		
Construction Activity	Noise from construction works	• Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works.		
Construction Activity	Dust	- Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. - Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. - Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. - Construction materials should be covered properly while carrying in vehicles to the site.	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance)	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. - Records of every training must be kept at site. - All kinds of Child labour are completely prohibited in every site. - Every construction materials storage site will be well fenced by Tin and safety caution tape.		
Construction Activity	Traffic Management	- Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. - Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. - Local traffic police department should be contacted, if traffic problem becomes more complex.	Contractor	Environmental Consultant of PIU
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement of heavy machinery and equipment. - Proper signage to be displayed at major junctions; and road diversions and closures to be	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness.		
Construction Activity	Labor Base Camp: Conflicts with the local residents	• Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation.	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Labour related issues and grievances	• A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: • Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		area and subsequently sold to authorized recyclers. - Refueling areas and other fluid transfer areas will be imperviously paved. - Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. - Applicability of the Hazardous Waste Management Rules.		
Construction Activity	Health & Safety Risks: 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.	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. - Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. - Proper Signpost at any slippery areas will be ensured in construction site.	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. - Adequate quantities of drinking water will be available at all Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities.		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	- Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion.	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- 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. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.		
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage: - Pollution from waste materials. - Health & Safety risks to workers and local community.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - Ensure that all affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. - Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; - All imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. - The contractor must arrange the cancellation of all temporary services.	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time.	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	- The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. - Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.	Contractor	Environmental Consultant of PIU
Operation & Maintenance	Road Safety. Impacts include:	Road safety issues can be minimized in following ways: By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety.	UE (Upazila Engineer)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	- The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers. - Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries.	- 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. - All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be	Upazila Engineer	District XEN, LGED

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report of Community Roads for Kurigram District (GCCR-15)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		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.

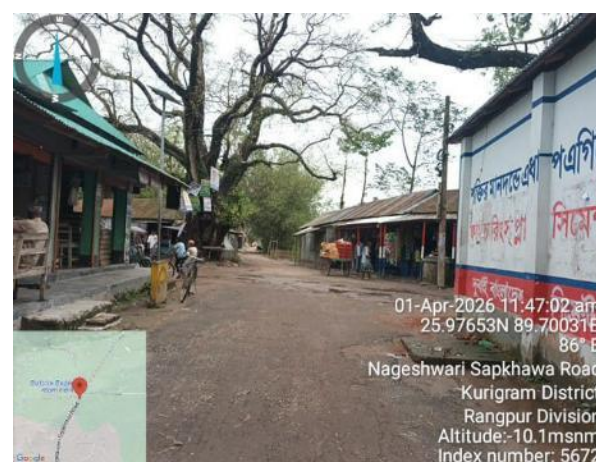
Cost of Environmental Enhancement Works in BOQ

Sl. no.	Description of item	Quantity	Unit price	Total amount
1.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	2508 Sq.m	@38.15 Tk. Per sqm	95,680.20
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	2090.0m	@ 2.56 BDT	5,350.40
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain	1 no.	LS @5000 Tk. Per box	5,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
	necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<u>Drinking Water Facilities</u> 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.	1 no.	LS @ Tk. 30,000	30,000
6.	<u>Traffic Management</u> 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.	1 no.	LS @ Tk. 15,000	15,000
7.	<u>Personal Protection Equipment for Workers</u> 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	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 Kurigram District (GCCR-15)

Sl. no.	Description of item	Quantity	Unit price	Total amount
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. <u>[One person to be appointed for 8 roads]</u>	Each	@ Tk. 35000	35,000
	Total Bill of Environmental facilities for this road			291,676.32



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for Bottola Chowmohona Bazar to Raygonj UP office, **Road ID:** 149613016

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

District: Kurigram

Upazila: Nageshwari

Union: Raygonj

Name of Community/Local Area: Modhurhailla, Bottola.

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The sub-project is categorized as a village road development project with bituminous carpeting. For proper drainage of floodwater, 4 U-drain at chainage 122,528,660,1010, One culvert (10 m × 5 m) at chainage 1067 m will also be constructed. These measures are proposed to protect the road embankment from erosion and to enhance the stability of the road structure, particularly during heavy rainfall and surface runoff conditions. To ensure slope protection and road stability, brick palisading walls and RCC retaining walls will be constructed where required. 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 6450 sqm.

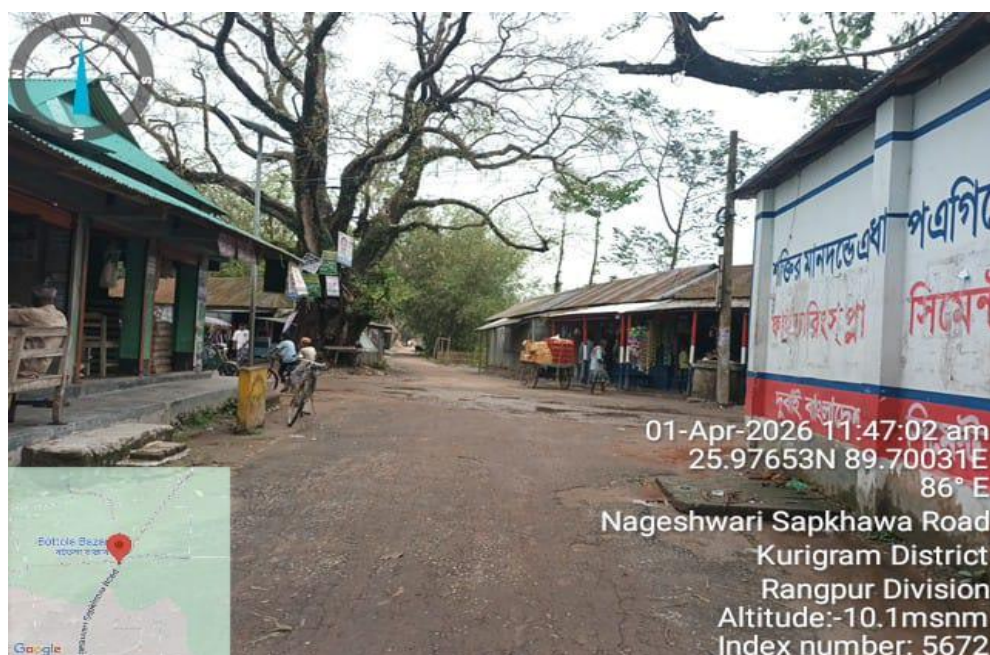
Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 2150m. 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	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Chainage 00m_ Shop.
		R	Chainage 0.00m_ Pond, chainage 61.00m house.
300-600	L		Chainage 370m, house, chainage-425m- Sonatoli Pukurpar gram samiti, chainage- 480m- house, Chainage-500 m-pond, chainage-560m- pond, Chainage-580m- house.
		R	Agricultural land

600-900	L		Chainage 890m, pond.
		R	Agricultural land
900-1200	L		Chainage 1050m, house.
		R	Chainage 1136m-house, chainage 1183m- pond.
1200-1500	L		Chainage 1268m- Eidgah Field, chainage 1424m pond.
		R	Chainage 1348m- Mosque.
1500-1800	L		Chainage 1670m- house, chainage 1730m- pond.
		R	Chainage 1840m- Purbo Volhat Gram Samiti, chainage 1865m- pond.
1800-2100	L		Agricultural land
		R	Chainage 1985m- KUR-005 Khamarpatra Nabish GPS (100m distance), chainage 1990m- pond,
2100-2150	L		Agricultural land
		R	Agricultural land



Starting Point of Bottola Chowmohona bazer to Raygonj UP office Road

Overall Comments

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

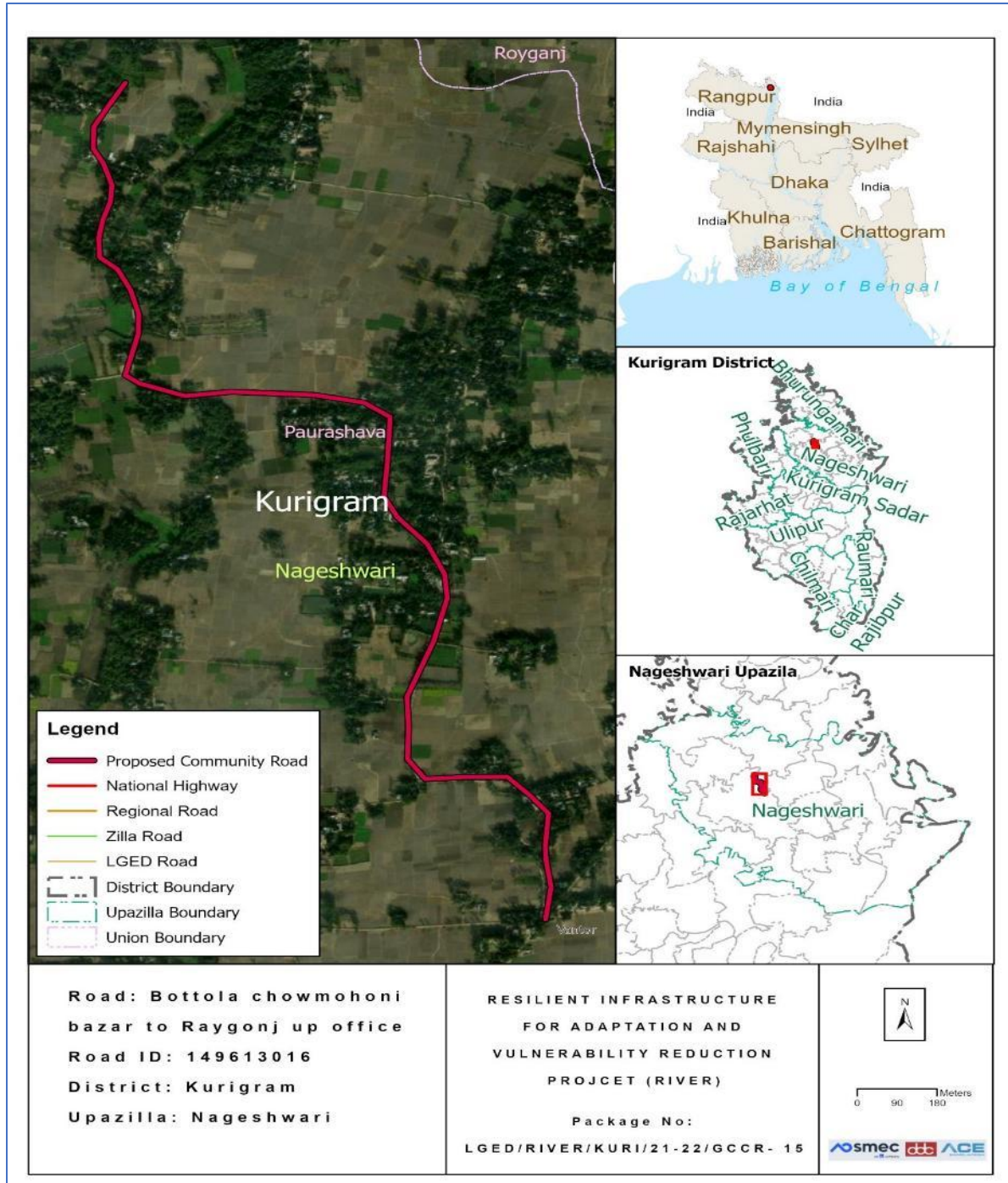
Types of waste to be generated during construction and operation phase:

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:

Within the influence area of the subproject no historical sites were identified. The sub-project is located within Bottola, Modhurhailla villages under Raygonj Union, Ward No. 1 of Nageshwari Upazila in Kurigram District. Several community features and assets are situated within approximately 100 meters of the project alignment. On the left side of the road, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right side,

there are damaged structures, houses, ponds, trees, and an existing bridge. No significant religious or cultural heritage sites will be affected by the proposed sub-project. The project activities are not expected to cause any disturbance to the religious or cultural values of the local community.



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 involves of Bituminous Carpeting (BC) and earthen. According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 00 to Ch. 2+150m.

Sub-project Location:

Important Features	
ID	149613016
District	Kurigram
Upazila	Nageshwari
Union	Raygonj
WARD	01
Total Chainage	2150m
Proposed Chainage	2150m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 25.97663 N Longitude: 89.70042 E
Road Ending Point Coordinates	Latitude: 26.00800 N Longitude: 89.69440 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 Bottola, Modhurhailla villages and Some other villages within one kilometer.
- 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. On the left side of the alignment, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right side, the surrounding features include damaged structures, houses, ponds, trees, and an existing bridge. The proposed sub-project is not expected to cause any disturbance to the religious or cultural values of the local community. Apart from the structures and features mentioned above, no environmentally sensitive, cultural, archaeological, or religious sites have been identified within the project influence area.

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 of Kurigram District is located mainly in **alluvial, silty, sandy soil formations**. The soils of this area have developed primarily from **recent alluvial deposits carried by rivers such as the Teesta River and the Dharla River**. The soils developing from these riverine deposits tend to be **sandy loam to silty clay loams**, which are generally fertile and suitable for agricultural activities.

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

Groundwater is the primary source of potable water in the sub-project area. Residents rely on both shallow and deep tube wells to meet their daily domestic water needs. Deep tube wells in the area typically extend to a depth of approximately 180 feet. Shallow tube wells, however, often fail to provide sufficient water during the dry season. Deep groundwater in the sub-project area is fresh, potable, and free from arsenic. In contrast, water from the shallower aquifers contains high concentrations of iron, limiting its suitability for drinking. The depth of the deep, drinkable groundwater varies between 100 and 180 feet, according to a field survey conducted in 2019. Local residents primarily use water from deep tube wells for drinking and other domestic purposes. It is recommended that additional deep tube wells be installed to extract water from the confined aquifer to ensure a safe and reliable supply of potable water.

Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681 μ s/cm, Fe-0.5 to 7.0 mg/l and As-Nil (Field Study Report, January 2026)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

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.

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 pre - existing drainage channel is found.
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: Bottola Chowmohona bazer to Raygonj UP office., Road ID: 149613016

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs - All the safeguard documents will be disclosed to all relevant stakeholders. - People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	dust and noise)			
Pre-Construction Stage	Sanitation and water supply	- 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. - Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	- Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	• All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. • Construction facilities including materials are to be placed at least 10m distance from any water	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		body in order to minimize the impacts on water bodies and natural water flow. • Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage.		
Construction Activity	Noise from construction works	• Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works.		
Construction Activity	Dust	- Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. - Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. - Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. - Construction materials should be covered properly while carrying in vehicles to the site.	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance)	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. - Records of every training must be kept at site. - All kinds of Child labour are completely prohibited in every site. - Every construction materials storage site will be well fenced by Tin and safety caution tape.		
Construction Activity	Traffic Management	- Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. - Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. - Local traffic police department should be contacted, if traffic problem becomes more complex.	Contractor	Environmental Consultant of PIU
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement of heavy machinery and equipment. - Proper signage to be displayed at major junctions; and road diversions and closures to be	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness.		
Construction Activity	Labor Base Camp: Conflicts with the local residents	• Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation.	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Labour related issues and grievances	• A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: • Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		area and subsequently sold to authorized recyclers. - Refueling areas and other fluid transfer areas will be imperviously paved. - Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. - Applicability of the Hazardous Waste Management Rules.		
Construction Activity	Health & Safety Risks: 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.	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. - Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. - Proper Signpost at any slippery areas will be ensured in construction site.	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. - Adequate quantities of drinking water will be available at all Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities.		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	- Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion.	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- 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. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.		
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage: - Pollution from waste materials. - Health & Safety risks to workers and local community.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - Ensure that all affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. - Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; - All imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. - The contractor must arrange the cancellation of all temporary services.	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time.	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	- The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. - Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.	Contractor	Environmental Consultant of PIU
Operation & Maintenance	Road Safety. Impacts include:	Road safety issues can be minimized in following ways: By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety.	UE (Upazila Engineer)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	- The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers. - Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries.	- 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. - All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be	Upazila Engineer	District XEN, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		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.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	2580.0 Sq.m	@38.15 Tk. Per sqm	98,427.00
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	2150m	@ 2.56 BDT	5,504.00
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain	1 no.	LS @5000 Tk. Per box	5,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
	necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<u>Drinking Water Facilities</u> 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.	1 no.	LS @ Tk. 30,000	30,000
6.	<u>Traffic Management</u> 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.	1 no.	LS @ Tk. 15,000	15,000
7.	<u>Personal Protection Equipment for Workers</u> 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	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 Kurigram District (GCCR-15)

Sl. no.	Description of item	Quantity	Unit price	Total amount
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. [One person to be appointed for 19 roads]	Each	@ Tk. 35000	35,000
	Total Bill of this road			294,576.72



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for Borovita Bazar to Pachim Dhaniram GPS,
Road ID: 149184074

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

District: Kurigram

Upazila: Phulbari

Union: Barabhita

Name of Community/Local Area: Borovita, Moddho Borovita

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The sub-project is categorized as a village road development project with bituminous carpeting. For proper drainage of floodwater, one **U-drain** 0.600 m × 0.600 m) at chainage 167 m will be constructed as required. These measures are proposed to protect the road embankment from erosion and to enhance the stability of the road structure, particularly during heavy rainfall and surface runoff conditions. To ensure slope protection and road stability, brick palisading walls and RCC retaining walls will be constructed where required. 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 4170 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 1390m. 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	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Chainage 00m_ Shop, house, pond, agriculture land, etc.
		R	Chainage 0.00m_ Shop, house, agriculture land, pond, etc.
300-600	L		Agriculture land, house, mosque, etc.
		R	House, agriculture land, ditches etc.
600-900	L		House, agriculture land etc.
		R	Houses, ditches, agriculture land etc.
900-1200	L		House, agriculture land etc.

		R	House, agriculture land, madrasah, pond etc.
1200-1390	L		House, madrasah, agriculture land, pond etc.
		R	House, agriculture land etc.



Starting Point of Borovita Bazar to Pachim Dhaniram GPS 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.

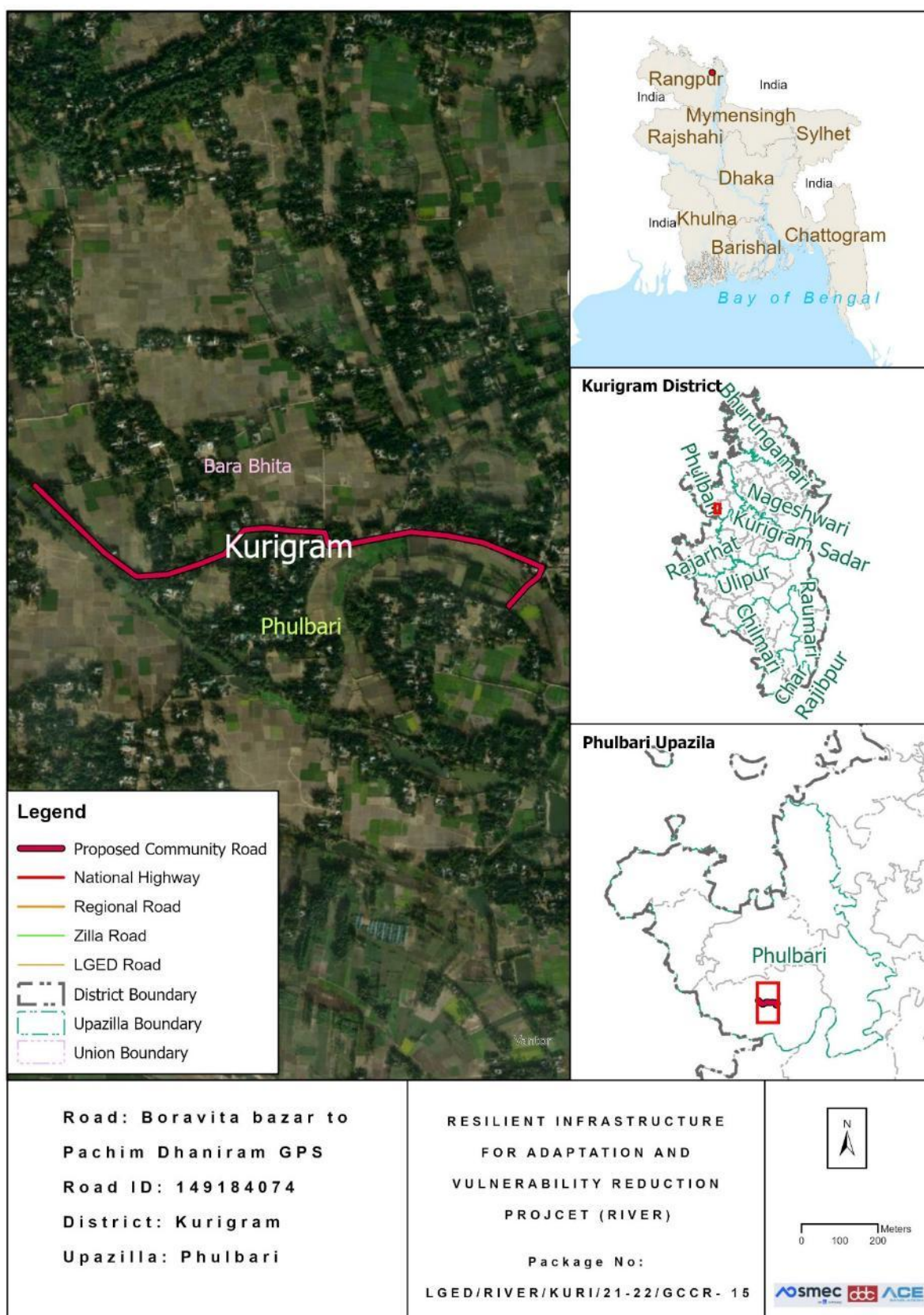
It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation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

Within the influence area of the subproject no historical sites were identified. The sub-project is located within Kalibari, Mohishamuri, and Gangachara villages under Kakina Union, Ward No. 9 of Kaliganj Upazila in Lalmonirhat District. Several community features and assets are situated within approximately 100 meters of the project alignment. On the left side of the road, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right side, there are damaged structures, houses, ponds, trees, and an existing bridge. No significant religious or cultural heritage sites will be affected by the proposed sub-project. The project activities are not expected to cause any disturbance to the religious or cultural values of the local community.



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 involves of Bituminous Carpeting (BC) and earthen. According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 00 to Ch. 2880m.

Sub-project Location:

Important Features	
ID	149184074
District	Kurigram
Upazila	Phulbari
Union	Baravita
WARD	06
Total Chainage	1390m
Proposed Chainage	1390m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 25.0979 N Longitude: 89.5811 E
Road Ending Point Coordinates	Latitude: 25.9098 N Longitude: 89.5690 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 Purbo Boro vita, Borovita villages and Some other villages within one kilometer.
- 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. On the left side of the alignment, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right side, the surrounding features include damaged structures, houses, ponds, trees, and an existing bridge. The proposed sub-project is not expected to cause any disturbance to the religious or cultural values of the local community. Apart from the structures and features mentioned above, no environmentally sensitive, cultural, archaeological, or religious sites have been identified within the project influence area.

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 of Kurigram District is located mainly in alluvial, silty, sandy soil formations. The soils of this area have developed primarily from recent alluvial deposits carried by rivers such as the Teesta River and the Dharla River. The soils developing from these riverine deposits tend to be sandy loam to silty clay loams, which are generally fertile and suitable for agricultural activities.
Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH): Groundwater is the primary source of potable water in the sub-project area. Residents rely on both shallow and deep tube wells to meet their daily domestic water needs. Deep tube wells in the area typically extend to a depth of approximately 180 feet. Shallow tube wells, however, often fail to provide sufficient water during the dry season. Deep groundwater in the sub-project area is fresh, potable, and free from arsenic. In contrast, water from the shallower aquifers contains high concentrations of iron, limiting its suitability for drinking. The depth of the deep, drinkable groundwater varies between 100 and 180 feet, according to a field survey conducted in 2019. Local residents primarily use water from deep tube wells for drinking and other domestic purposes. It is recommended that additional deep tube wells be installed to extract water from the confined aquifer to ensure a safe and reliable supply of potable water. Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (Field Study Report, January 2026)
Status of wildlife movement: N/A (None of the information was found about the wildlife movement in or across the area)
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.

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 pre - existing drainage channel is found.
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: Borovita Bazar to Pachim Dhaniram GPS, Road ID: 149184074

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs - All the safeguard documents will be disclosed to all relevant stakeholders. - People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	accidents to workers/ local people, generating dust and noise)			
Pre-Construction Stage	Sanitation and water supply	- 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. - Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	- Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		ensured. • Provision of waste bins/ cans, where appropriate, • Litter is to be collected daily. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	• 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.	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow. - Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. - After completing the development, the site shall be restored as before. - This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. - Sub project intervention must avoid natural disturbance to existing slop and natural drainage.		
Construction Activity	Noise from construction works	- Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. - All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. - Noise producing vehicles and equipment will be keep in maintenance regularly.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works.		
Construction Activity	Dust	- Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. - Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. - Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. - Construction materials should be covered properly while carrying in vehicles to the site.	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		at site office and stack yards, and maintaining a visitor's log book at entrance) • Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. • Records of every training must be kept at site. • All kinds of Child labour are completely prohibited in every site. • Every construction materials storage site will be well fenced by Tin and safety caution tape.		
Construction Activity	Traffic Management	• Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. • Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. • Local traffic police department should be contacted, if traffic problem becomes more complex.	Contractor	Environmental Consultant of PIU
Construction Activity	Increase in road accidents	• Maintain safety measures during the movement of heavy machinery and equipment.	Contractor	Environmental Consultant of

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness.		PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	• Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		consultation.		
Construction Activity	Labour related issues and grievances	• A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: • Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site. • The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		subsequently sold to authorized recyclers. - Refueling areas and other fluid transfer areas will be imperviously paved. - Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. - Applicability of the Hazardous Waste Management Rules.		
Construction Activity	Health & Safety Risks: 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.	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. - Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. - Proper Signpost at any slippery areas will be ensured in construction site. - Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire.	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
	Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. - Adequate quantities of drinking water will be available at all Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. - Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Pollution of water bodies	• Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • 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. • Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	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: • Pollution from waste materials. • Health & Safety risks to workers and local community.	• Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; • Ensure that all affected structures rehabilitated/compensated; • The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. • Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; • All imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. • The contractor must arrange the cancellation of all temporary services.	Contractor	Environmental Consultant of PIU/D&SC, district XEN.
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting	• Preventative maintenance schedule should be followed. • Solid organic wastes should be stored in bins and/or skips and emptied regularly at a designated waste disposal area away from the camp site. If no	Contractor	Environmental Consultant of PIU, Union Parishad Member

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	surrounding water bodies, flora and fauna	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.		
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	- The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. - Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.	Contractor	Environmental Consultant of PIU
Operation & Maintenance	Road Safety. Impacts include: The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The	Road safety issues can be minimized in following ways: - By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. - Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. Road signage and speed breaker for School (1+279) and road signage for graveyard (0+758) shall be installed/ constructed.	UE (Upazila Engineer)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	accidents may also be due to tiredness of drivers. 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.	All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	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.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	1,668.0 Sq.m	@38.15 Tk. Per sqm	63,634.20
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	1390.0m	@ 2.56 BDT	3,558.40
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain	1 no.	LS @5000 Tk. Per box	5,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
	necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<u>Drinking Water Facilities</u> 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.	1 no.	LS @ Tk. 30,000	30,000
6.	<u>Traffic Management</u> 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.	1 no.	LS @ Tk. 15,000	15,000
7.	<u>Personal Protection Equipment for Workers</u> 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	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 Kurigram District (GCCR-15)

Sl. no.	Description of item	Quantity	Unit price	Total amount
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. <u>[One person to be appointed for 19 roads]</u>	Each	@ Tk. 35000	35,000
	Total Bill of for this road			257,838.32



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for Borovita UP at Omer tapoti - Amsa Bazar - Borolay Bazar via Bulbul Khandakar house (Shahajahan Sochib house), **Road ID:** 149184094

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

District: Kurigram

Upazila: Phulbari

Union: baravita

Name of Community/Local Area: Poschim Nazarmamud, KhoribariNodabas, Poschim Naodabas

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The sub-project is categorized as a village road development project with bituminous carpeting. Palisading will be given at chainage 120,875,1565m. These measures are proposed to protect the road embankment from erosion and to enhance the stability of the road structure, particularly during heavy rainfall and surface runoff conditions. To ensure slope protection and road stability, brick palisading walls and RCC retaining walls will be constructed where required. 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 8,865 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 2955m. 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	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Shop, house, agriculture land, etc.
		R	Shop, pond, house, agriculture land, etc.
300-600	L		House, agriculture land, GPS, etc.
		R	Agriculture land, house, etc.
600-900	L		High school, agriculture land, and houses.
		R	House, agriculture land, etc.
900-1200	L		House, agriculture land, etc.
		R	House, agriculture land, etc.

Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
1200-1500	L		Agriculture land, fishpond and houses etc.
		R	House, agriculture land, ditches etc.
1500-1800	L		House, agriculture land, and mosque.
		R	Agriculture land, house etc.
1800-2100	L		Village market area, houses, waterbody, agriculture land etc.
		R	Village market, agriculture land, etc.
2100-2400	L		House agriculture land, etc.
		R	House agriculture land, etc.
2400-2700	L		Agriculture land, houses etc.
		R	Agriculture land, pond, houses.
2700-2955	L		Houses, agriculture land.
		R	Agriculture land, pond, houses.



Starting Point of Borovita UP at Omer tapoti - Amsa Bazar - Borolay Bazar via Bulbul Khandakar house 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.

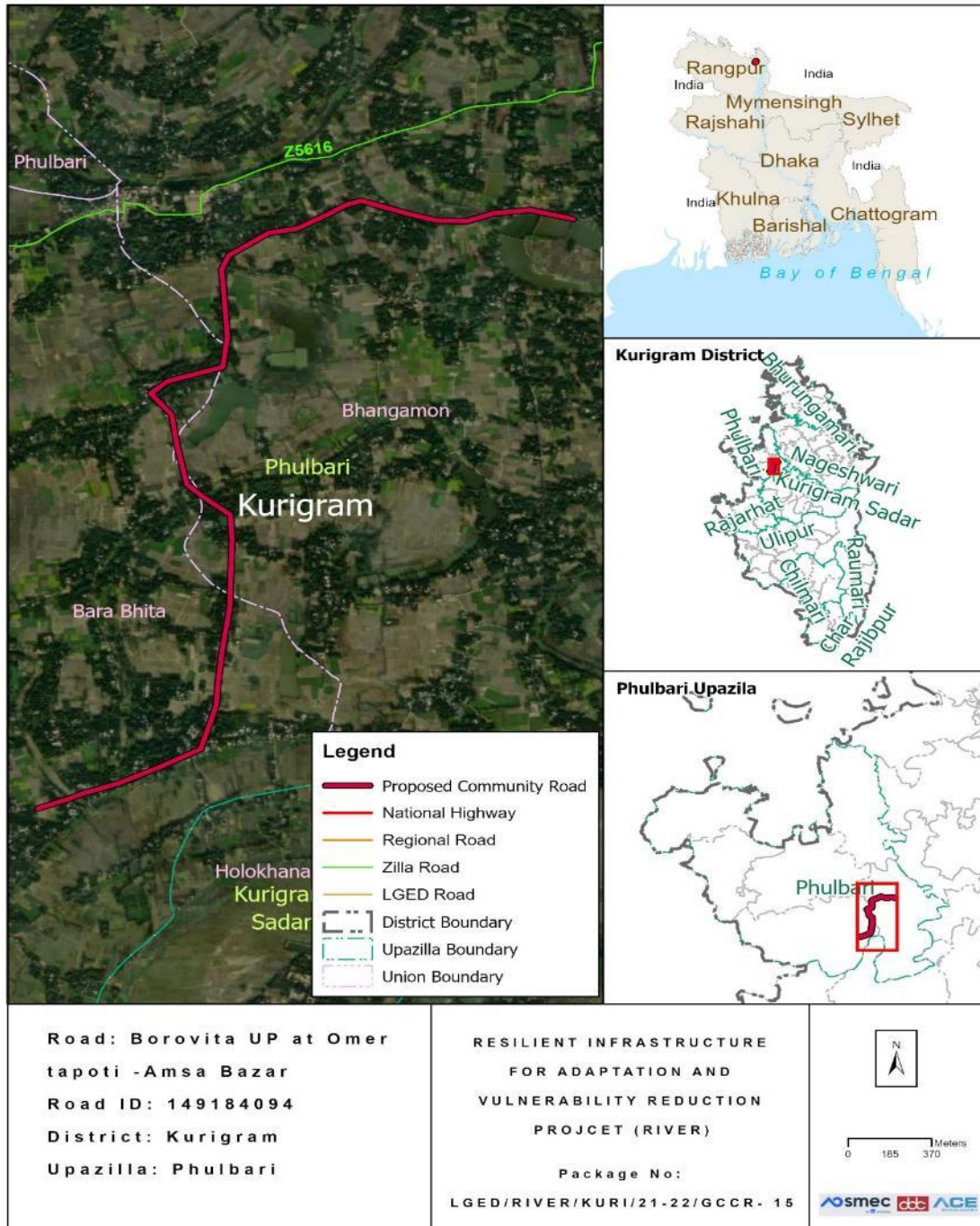
Types of waste to be generated during construction and operation phase:

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:

Within the influence area of the subproject no historical sites were identified. The sub-project is located within Poschim Naodabas, Khoribari, Nojor Mamud villages under Borovita Union, Ward No. 8 of Phulbari Upazila in Kurigram District. Several community features and assets are situated within approximately 100 meters of the project alignment. On the left side of the road, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right

side, there are damaged structures, houses, ponds, trees, and an existing bridge. No significant religious or cultural heritage sites will be affected by the proposed sub-project. The project activities are not expected to cause any disturbance to the religious or cultural values of the local community.



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 involves of Bituminous Carpeting (BC) and earthen. According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 00 to Ch. 2880m.

Sub-project Location:

Important Features	
ID	149184094)
District	Kurigram
Upazila	Phulbari
Union	Borovita
WARD	08
Total Chainage	2955m
Proposed Chainage	2955m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 25.9235 N Longitude: 89.6073 E
Road Ending Point Coordinates	Latitude: 25.9046 N Longitude: 89.6030 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 Poschim Noudabas, Khoribari, Noudabash villages and Some other villages within one kilometer.
- 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. On the left side of the alignment, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right side, the surrounding features include damaged structures, houses, ponds, trees, and an existing bridge. The proposed sub-project is not expected to cause any disturbance to the religious or cultural values of the local community. Apart from the structures and features mentioned above, no environmentally sensitive, cultural, archaeological, or religious sites have been identified within the project influence area.

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 of kurigram District is located mainly in **alluvial, silty, sandy soil formations**. The soils of this area have developed primarily from **recent alluvial deposits carried by rivers such as the Teesta River and the Dharla River**. The soils developing from these riverine deposits tend to be **sandy loam to silty clay loams**, which are generally fertile and suitable for agricultural activities.

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

Groundwater is the primary source of potable water in the sub-project area. Residents rely on both shallow and deep tube wells to meet their daily domestic water needs. Deep tube wells in the area typically extend to a depth of approximately 180 feet. Shallow tube wells, however, often fail to provide sufficient water during the dry season. Deep groundwater in the sub-project area is fresh, potable, and free from arsenic. In contrast, water from the shallower aquifers contains high concentrations of iron, limiting its suitability for drinking. The depth of the deep, drinkable groundwater varies between 100 and 180 feet, according to a field survey conducted in 2019. Local residents primarily use water from deep tube wells for drinking and other domestic purposes. It is recommended that additional deep tube wells be installed to extract water from the confined aquifer to ensure a safe and reliable supply of potable water. Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681 μ s/cm, Fe-0.5 to 7.0 mg/l and As-Nil (Field Study Report, January 2026)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

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.

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 pre - existing drainage channel is found.
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: Borovita UP at Omer tapoti - Amsa Bazar - Borolay Bazar via Bulbul Khandakar house (Shahajahan Sochib house), Road ID: 149184094)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs - All the safeguard documents will be disclosed to all relevant stakeholders. - People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	local people, generating dust and noise)			
Pre-Construction Stage	Sanitation and water supply	- 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. - Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	- Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. - Provision of waste bins/ cans, where appropriate,	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Litter is to be collected daily. - Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. - Camp and working areas are to be kept clean and tidy at all times. - Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. - Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. - Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	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.	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow. - Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. - After completing the development, the site shall be restored as before. - This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. - Sub project intervention must avoid natural disturbance to existing slop and natural drainage.		
Construction Activity	Noise from construction works	- Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. - All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. - Noise producing vehicles and equipment will be keep in maintenance regularly.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or less expensive alternative options will be selected during the construction works.		
Construction Activity	Dust	- Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. - Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. - Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. - Construction materials should be covered properly while carrying in vehicles to the site.	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		guards at site office and stack yards, and maintaining a visitor's log book at entrance) • Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff. • Records of every training must be kept at site. • All kinds of Child labour are completely prohibited in every site. • Every construction materials storage site will be well fenced by Tin and safety caution tape.		
Construction Activity	Traffic Management	• Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. • Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. • Local traffic police department should be contacted, if traffic problem becomes more complex.	Contractor	Environmental Consultant of PIU
Construction Activity	Increase in road accidents	• Maintain safety measures during the movement of heavy machinery and equipment.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness.		
Construction Activity	Labor Base Camp: Conflicts with the local residents	• Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces.	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Labor code of conduct is to be disclosed through consultation.		
Construction Activity	Labour related issues and grievances	- A separate grievance mechanism for workers has to be established for the work package. - Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. - Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site. - The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. - Refueling areas and other fluid transfer areas will be imperviously paved. - Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. - Applicability of the Hazardous Waste Management Rules.		
Construction Activity	Health & Safety Risks: 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,	- All construction equipment will be properly inspected timely. - The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. - Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. - Proper Signpost at any slippery areas will be ensured in construction site.	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	and electrical shocks. Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	- Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. - Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. - All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. - Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. - Adequate quantities of drinking water will be available at all Sites, on different locations within the site. - Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities.		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	- Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion.	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- 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. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.		
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage: - Pollution from waste materials. - Health & Safety risks to workers and local community.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - Ensure that all affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. - Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; - All imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. - The contractor must arrange the cancellation of all temporary services.	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time.	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	- The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. - Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.	Contractor	Environmental Consultant of PIU
Operation & Maintenance	Road Safety. Impacts include:	Road safety issues can be minimized in following ways: By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety.	UE (Upazila Engineer)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	- The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers. - Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries.	- 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. - All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be	Upazila Engineer	District XEN, LGED

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Environmental & Social Assessment and Management Report of Community Roads for Kurigram District (GCCR-15)

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		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.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	3,546.00 Sq.m	@38.15 Tk. Per sqm	135,279.90
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	2955.0m	@ 2.56 BDT	7,564.80
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain	1 no.	LS @5000 Tk. Per box	5,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
	necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<u>Drinking Water Facilities</u> 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.	1 no.	LS @ Tk. 30,000	30,000
6.	<u>Traffic Management</u> 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.	1 no.	LS @ Tk. 15,000	15,000
7.	<u>Personal Protection Equipment for Workers</u> 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	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 Kurigram District (GCCR-15)

Sl. no.	Description of item	Quantity	Unit price	Total amount
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. <u>[One person to be appointed for 19 roads]</u>	Each	@ Tk. 35000	35,000
	Total Bill for this road			333,490.42



Existing Surroundings of the Sub-Project

Name of Sub-Project: Improvement of Community Road for Harisher taluk-Sindurmati Road, **Road ID:** 149775028

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

District: Kurigram

Upazila: Rajarhat

Union: Rajarhat

Name of Community/Local Area: Harishertaluk,Rajarhat

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The sub-project is categorized as a village road development project with bituminous carpeting. Palisading will be given at chainage 61m, 81m, 332m, 440m, 460m, 483m These measures are proposed to protect the road embankment from erosion and to enhance the stability of the road structure, particularly during heavy rainfall and surface runoff conditions. To ensure slope protection and road stability, brick palisading walls and RCC retaining walls will be constructed where required. 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 1785 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 586m. 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	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Hatbazar shops, beel, ditches, pond, fishpond, human settlement, and agriculture land.
		R	Fishpond, pond, and human settlement.
300-586	L		Fishpond, ditches, pond, and human settlement.
		R	Fishpond, pond, and human settlement.



Starting Point of Harisher taluk-Sindurmati Road 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

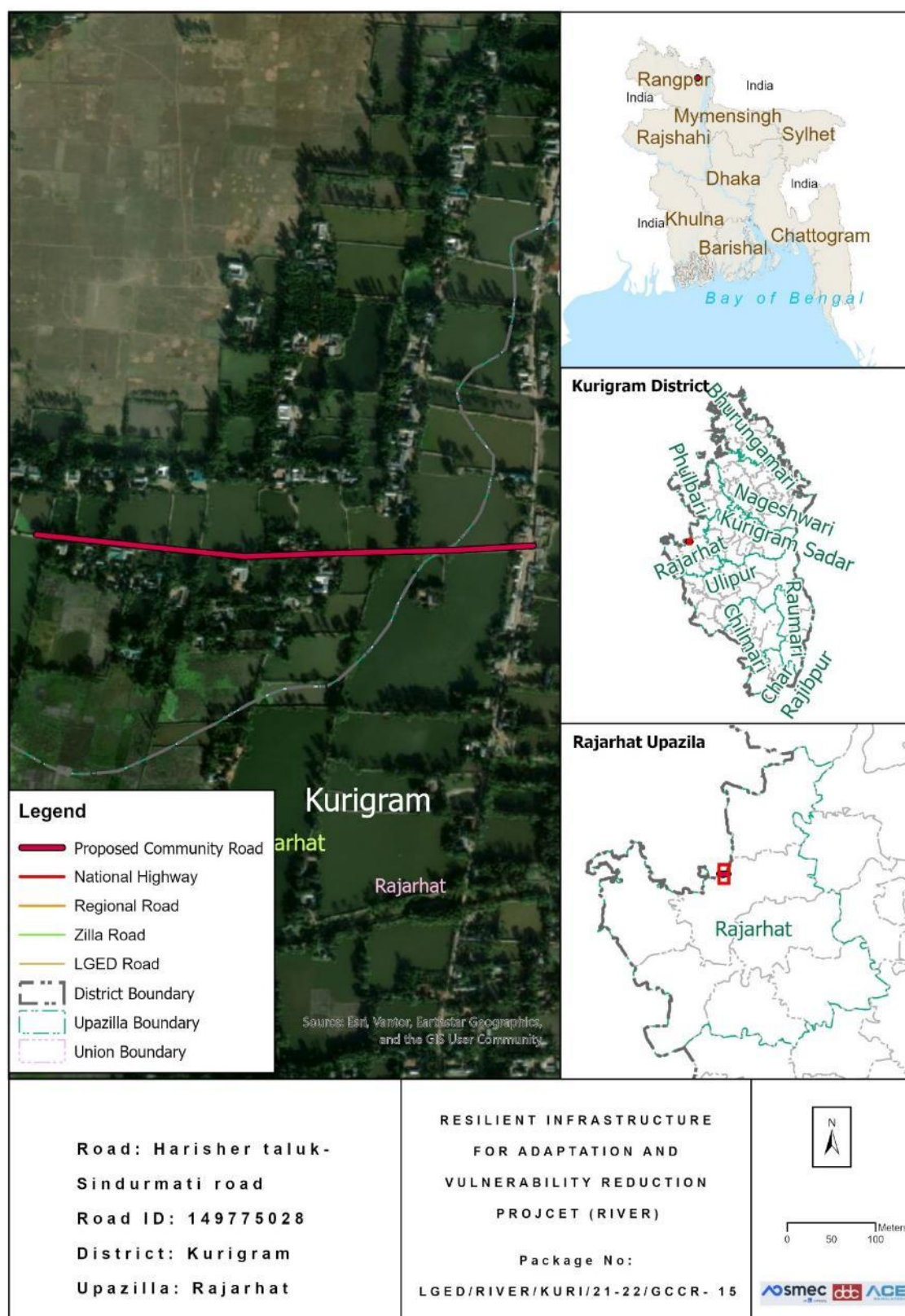
into the evaluation of this project since runoff from higher grounds are also a concerning matter during rainy season. The proposed Sub-project area for the construction included flat areas and moderate hillock village road is not located within any identified environmentally sensitive area, and therefore, 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:

Within the influence area of the subproject no historical sites were identified. The sub-project is located within Harisher taluk villages under Rajarhat Union, Ward No. 2 of Rajarhat Upazila in Kurigram District. Several community features and assets are situated within approximately 100 meters of the project alignment. On the left side of the road, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right side, there are damaged structures, houses, ponds, trees, and an existing bridge. No significant religious or cultural heritage sites will be affected by the proposed sub-project. The project activities are not expected to cause any disturbance to the religious or cultural values of the local community.



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 involves of Bituminous Carpeting (BC) and earthen. According to the design this sub-project will be developed with Bituminous Carpeting (BC) from Ch. 00 to Ch. 2880m.

Sub-project Location:

Important Features	
ID	149775028
District	Kurigram
Upazila	Rajathat
Union	Rajarhat
WARD	02
Total Chainage	600m
Proposed Chainage	586m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 25.816370 N Longitude: 89.533570 E
Road Ending Point Coordinates	Latitude: 25.816478 N Longitude: 89.528597 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 Harishwer Taluk villages and Some other villages within one kilometer.
- 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. On the left side of the alignment, these include damaged structures, ponds, trees, houses, agricultural land, and small shops. On the right side, the surrounding features include damaged structures, houses, ponds, trees, and an existing bridge. The proposed sub-project is not expected to cause any disturbance to the religious or cultural values of the local community. Apart from the structures and features mentioned above, no environmentally sensitive, cultural, archaeological, or religious sites have been identified within the project influence area.

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 of Kurigram District is located mainly in alluvial, silty, sandy soil formations. The soils of this area have developed primarily from **recent alluvial deposits carried by rivers such as the Teesta River and the Dharla River**. The soils developing from these riverine deposits tend to be **sandy loam to silty clay loams**, which are generally fertile and suitable for agricultural activities.

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

Groundwater is the primary source of potable water in the sub-project area. Residents rely on both shallow and deep tube wells to meet their daily domestic water needs. Deep tube wells in the area typically extend to a depth of approximately 180 feet. Shallow tube wells, however, often fail to provide sufficient water during the dry season. Deep groundwater in the sub-project area is fresh, potable, and free from arsenic. In contrast, water from the shallower aquifers contains high concentrations of iron, limiting its suitability for drinking. The depth of the deep, drinkable groundwater varies between 100 and 180 feet, according to a field survey conducted in 2019. Local residents primarily use water from deep tube wells for drinking and other domestic purposes. It is recommended that additional deep tube wells be installed to extract water from the confined aquifer to ensure a safe and reliable supply of potable water. Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (Field Study Report, January 2026)

Status of wildlife movement:

N/A (None of the information was found about the wildlife movement in or across the area)

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 pre - existing drainage channel is found.
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: Harisher taluk-Sindurmati Road Road, Road ID: 149775028

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Stakeholders Engagement	- All of the project stakeholders should be consulted - Separate community level consultation meeting with the potential affected HHs - All the safeguard documents will be disclosed to all relevant stakeholders. - People living in nearby communities will be involved with the GRM system and representatively included in the project GRCs.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Loss of right to access	- Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. - In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/ local people, generating dust and noise)	- Transportation of construction materials to the site will be carried out by covering the materials as a whole. - Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Sanitation and water supply	- 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. - Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Site Selection for workers camps, stack yards & implementing interventions: Generation of ESHS issues.	- Workers camp, site office and stack yard should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. - No trees, shrubs will be removed or vegetation stripped without prior permission of the Environmental Consultants. If any tree is required to remove for an unavoidable circumstance, 3 (three) numbers of trees will be planted for each tree removed and budgetary allocation for taking care of those trees for 12 months has to be ensured. - Provision of waste bins/ cans, where appropriate, - Litter is to be collected daily. - Bins and/ or skips should be emptied regularly	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times. • Stack materials will be covered with tarpaulins/ polythene in the yard and end parts of the reinforced steel bar/ iron rod will be properly covered with safety caps or clothes/jute sacks, etc. for avoiding any accidental events from those. • Hazardous materials, including oil, paints, etc. will be stored on a bunded area or wooden platform with polythene lying over it. • Proper fencing around the storage area and working site in order to get secured, to minimize the risk of crime and to be safe from access by students, children, animals, etc.		
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	• All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind of surface runoff. • Construction facilities including materials are to be placed at least 10m distance from any water body in order to minimize the impacts on water bodies and natural water flow.	PIU & Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Tubewell location wherever required to install, within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage.		
Construction Activity	Noise from construction works	• Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. • Noise producing vehicles and equipment will be keep in maintenance regularly. • Since expensive engineering controls (e.g., acoustic curtains, noise barriers, etc.) may not be feasible in terms of availability and scope of the project works, noise reduction muffler or	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		less expensive alternative options will be selected during the construction works.		
Construction Activity	Dust	- Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. - Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. - Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. - Construction materials should be covered properly while carrying in vehicles to the site.	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	- Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem (e.g., employing guards at site office and stack yards, and maintaining a visitor's log book at entrance) - Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staff.	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- Records of every training must be kept at site. - All kinds of Child labour are completely prohibited in every site. - Every construction materials storage site will be well fenced by Tin and safety caution tape.		
Construction Activity	Traffic Management	- Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. - Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. - Local traffic police department should be contacted, if traffic problem becomes more complex.	Contractor	Environmental Consultant of PIU
Construction Activity	Increase in road accidents	- Maintain safety measures during the movement of heavy machinery and equipment. - Proper signage to be displayed at major junctions; and road diversions and closures to	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness.		
Construction Activity	Labor Base Camp: Conflicts with the local residents	• Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation.	Contractor	Social Development Specialist and Gender Specialist of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Labour related issues and grievances	- A separate grievance mechanism for workers has to be established for the work package. - Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. - Appropriate notification or training to the workers about the scope and procedure of the grievance system will be provided at the starting of the work. All new workers recruited at different times/phases will be oriented about the same.		
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: - Waste from the temporary accommodation facilities for labor and equipment maintenance/vehicles on-site. - The construction debris material generated from the erection of structures and demolition works (wherever applicable), and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. - Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded	Contractor	Environmental Consultant of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		area and subsequently sold to authorized recyclers. • Refueling areas and other fluid transfer areas will be imperviously paved. • Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. • Applicability of the Hazardous Waste Management Rules.		
Construction Activity	Health & Safety Risks: • The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. • Exposure to health	• All construction equipment will be properly inspected timely. • The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. • Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. • Proper Signpost at any slippery areas will be ensured in construction site.	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	• Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. • Provision to first aid box containing adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area. • All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities.		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	- Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. - The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) - The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. - Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion.	Contractor	Environmental Consultant of PIU/D&SC.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		- 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. - Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water.		
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage: - Pollution from waste materials. - Health & Safety risks to workers and local community.	- Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; - Ensure that all affected structures rehabilitated/compensated; - The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. - Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; - All imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. - The contractor must arrange the cancellation	Contractor	Environmental Consultant of PIU/D&SC, district XEN.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		of all temporary services.		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	- Preventative maintenance schedule should be followed. - Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time.	Contractor	Environmental Consultant of PIU, Union Parishad Member
Pre-Construction and Construction	Rigorous Monitoring and Report Preparation and Submission	- The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. - Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU.	Contractor	Environmental Consultant of PIU
Operation & Maintenance	Road Safety. Impacts include:	Road safety issues can be minimized in following ways: By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety.	UE (Upazila Engineer)	District Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	- The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers. - Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries.	- 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. - All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time.		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	- Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. - Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light.	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.	<u>Grass Turfing</u> Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	7,03.2 Sq.m	@38.15 Tk. Per sqm	26,827.08
2.	<u>Dust suppression measures</u> Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	586 m	@ 2.56 BDT	1,500.16
3.	<u>Water Supply and Sanitation</u> Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	<u>First Aid Box</u> Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain	1 no.	LS @5000 Tk. Per box	5,000

Sl. no.	Description of item	Quantity	Unit price	Total amount
	necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.			
5.	<u>Drinking Water Facilities</u> 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.	1 no.	LS @ Tk. 30,000	30,000
6.	<u>Traffic Management</u> 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.	1 no.	LS @ Tk. 15,000	15,000
7.	<u>Personal Protection Equipment for Workers</u> 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	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 Kurigram District (GCCR-15)

Sl. no.	Description of item	Quantity	Unit price	Total amount
8.	<u>Motivation training</u> Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
10.	<u>Water Test (Drinking Water samples)</u> Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
11.	<u>Working labour shed:</u> Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
12.	<u>Environmental management</u> Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. [One person to be appointed for 19 roads]	Each	@ Tk. 35000	35,000
	Total Bill of Environmental facilities for this road			218972.96



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: Jadur char Nidungram ghat Road to Dhara char F.C.D. Date: 29-03-2026
Road ID: 140704115

Place of Consultation:

Village: Jadur char Ward No.: 01 Union: OS No Jadur char Upazila: Raumar

District: Kurigram

Public Consultation Participants List

Sl. No.	Name	Male/Female	Age	Occupation	Village/Address	Mobile No.	Signature
১	আঃ মাহিন	পুঃ	৪৫	কৃষি	খাদুৱা নুঙ্গুৱা		মাহিন
২	আঃ মাহিন	পুঃ	৩০	কৃষি	"		মাহিন
৩	আঃ মাহিন	পুঃ	৬০	কৃষি	"		মাহিন
৪	আঃ মাহিন	পুঃ	৬০	"	"		মাহিন
৫	আঃ মাহিন	পুঃ	৩৫	কৃষি	খাদুৱা নুঙ্গুৱা		মাহিন
৬	আঃ মাহিন	পুঃ	৩০	কৃষি	"		মাহিন
৭	আঃ মাহিন	পুঃ	৭০	কৃষি	"		মাহিন
৮	আঃ মাহিন	পুঃ	২৬	কৃষি	"		মাহিন
৯							
১০							
১১							
১২							
১৩							
১৪							
১৫							
১৬							
১৭							
১৮							
১৯							
২০							

Public Consultation with Stakeholders

Tallala Mandelpore.

Upazila: Raiparhat

District: Kurigrene

[illegible]

Resilient infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Local Government Engineering Department (LGED)
Public Consultation with Stakeholders

Name of Community Road: Taltola pucca Road - Dinobazar Date: 01.04.2026
Road ID: 149775048. via Kalirpat.

Place of Consultation:

Village: Bajemugrai Ward No.: 08 Union: Chakirpashar Upazila: Rajshahi
District: Kurigram

Public Consultation Participants List

Sl. No.	Name	Male/Female	Age	Occupation	Village/Address	Mobile No.	Signature
	Rantun Rabbi	Male	33	Engineer	Bajemugrai		
	আমিনুল	পুরুষ	22	ছাত্র	ছায়েমাট		আমিনুল
	শ্রীযুক্ত	"	58	কৃষক	"		শ্রীযুক্ত
	শ্রীমান (স্বামী)	"	64	লবঙ্গ শিল্প	বাকুলপুর		
	আব্দুল	"	19	ছাত্র	ছায়েমাট		
	শ্রীমান মন্ডল	MALE	40	কলকার	মন্ডলপুর		
	মন্ডল	"	19	ছাত্র	"		
	শ্রীমান মন্ডল	FEMALE	63	কলকার	"		
	মন্ডল	Male	30	কলকার	ছায়েমাট		
	মন্ডল	পুরুষ	22	ছাত্র	মন্ডলপুর		
	মন্ডল	মহিলা	19	ছাত্র	মন্ডলপুর		
	মন্ডল	পুরুষ	26	ছাত্র	ছায়েমাট		

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project

Local Government Engineering Department (LGED)

Public Consultation with Stakeholders

Name of Community Road: Holokhana Sarkerpura Eidga field to Date: 28-03-2026
Road ID: 149525088 Hemerkuti WARD A Embannat.
Place of Consultation: Holokhana Sarkerpura Eidga field - Hemerkuti Wadda embannat.
Village: Ververy/Hemerkuti Ward No.: 05/02 Union: Holokhana Upazila: Kurigram Sadar
District: Kurigram

Public Consultation Participants List

Sl. No.	Name	Male/Female	Age	Occupation	Village/Address	Mobile No.	Signature
01	শ্রী: মোহাম্মদ আলী	male	৪৫	কৃষি	হলখোন্ডা		
02	শ্রী: মোহাম্মদ আলী	"	৫৫	কৃষি	হলখোন্ডা		
03	শ্রী: মোহাম্মদ আলী	"	৫৫	কৃষি	হলখোন্ডা		
04	শ্রী: মোহাম্মদ আলী	"	৬৪	কৃষি	হলখোন্ডা		
05	শ্রী: মোহাম্মদ আলী	"	৬২	কৃষি	হলখোন্ডা		
06	শ্রী: মোহাম্মদ আলী	"	৬৪	কৃষি	হলখোন্ডা		
07	শ্রী: মোহাম্মদ আলী	"	৬৫	কৃষি	হলখোন্ডা		
08	শ্রী: মোহাম্মদ আলী	"	৪২	কৃষি	হলখোন্ডা		
09	শ্রী: মোহাম্মদ আলী	"	৬০	কৃষি	হলখোন্ডা		
10	শ্রী: মোহাম্মদ আলী	"	৬০	কৃষি	হলখোন্ডা		
11	শ্রী: মোহাম্মদ আলী	"	৬৫	কৃষি	হলখোন্ডা		
12	শ্রী: মোহাম্মদ আলী	"	২৫	কৃষি	হলখোন্ডা		
13	শ্রী: মোহাম্মদ আলী	"	২৬	কৃষি	হলখোন্ডা		
14	শ্রী: মোহাম্মদ আলী	"	৫০	কৃষি	হলখোন্ডা		
15	শ্রী: মোহাম্মদ আলী	"	৬৭	কৃষি	হলখোন্ডা		
16	শ্রী: মোহাম্মদ আলী	"	৪০	কৃষি	হলখোন্ডা		
17	শ্রী: মোহাম্মদ আলী	"	২৭	কৃষি	হলখোন্ডা		

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project

Local Government Engineering Department (LGED)

Public Consultation with Stakeholders

Name of Community Road: Bancharam .

Date: 28-03-26

Road ID: 149525012

Place of Consultation: Bancharam - BWDB embankment.

Village: Bancharam/Nidhi-gram. Ward No.: 03/02 Union: Mogalbasha

Upazila: Kurigram Sadar.

District: Kurigram

Public Consultation Participants List

Sl. No.	Name	Male/Female	Age	Occupation	Village/Address	Mobile No.	Signature
01	শ্রী: বিজয়	male	৫০	কৃষি	বাংলা		বিজয়
02	শ্রী: মাহিন	"	৬২	কৃষি	বাংলা		মাহিন
03	শ্রী: মাহিন	"	৬২	কৃষি	বাংলা		মাহিন
04	শ্রী: মাহিন	"	২৫	কৃষি	বাংলা		মাহিন
05	শ্রী: মাহিন	"	৫৫	কৃষি	বাংলা		মাহিন
06	শ্রী: মাহিন	"	৪০	কৃষি	বাংলা		মাহিন
07	শ্রী: মাহিন	"		কৃষি	বাংলা		মাহিন
08	শ্রী: মাহিন	"	৫৫	কৃষি	বাংলা		মাহিন
09	শ্রী: মাহিন	"	৫৫	কৃষি	বাংলা		মাহিন
10	শ্রী: মাহিন	"	৫৫	কৃষি	বাংলা		মাহিন
11	শ্রী: মাহিন	"	৫৫	কৃষি	বাংলা		মাহিন
12	শ্রী: মাহিন	"	৫৫	কৃষি	বাংলা		মাহিন
13	শ্রী: মাহিন	"	৫৫	কৃষি	বাংলা		মাহিন
14	শ্রী: মাহিন	"	৫৫	কৃষি	বাংলা		মাহিন
15	শ্রী: মাহিন	"	৫৫	কৃষি	বাংলা		মাহিন
16	শ্রী: মাহিন	"	৫৫	কৃষি	বাংলা		মাহিন
17	শ্রী: মাহিন	"	৫৫	কৃষি	বাংলা		মাহিন
18	শ্রী: মাহিন	"	৫৫	কৃষি	বাংলা		মাহিন
19	শ্রী: মাহিন	"	৫৫	কৃষি	বাংলা		মাহিন
20	শ্রী: মাহিন	"	৫৫	কৃষি	বাংলা		মাহিন

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project

Local Government Engineering Department (LGED)

Public Consultation with Stakeholders

Name of Community Road: Nefendanga Road.

Date: 28-03-26

Road ID: 149525001

Place of Consultation: Nefendanga to Arianda Kumari.

Village: protab.

Ward No.: 5 No Ward. Union: Kathal Bari. Upazila: Kurigram Sadar.

District: Kurigram.

Public Consultation Participants List

Sl. No.	Name	Male/Female	Age	Occupation	Village/Address	Mobile No.	Signature
02	Mr. Arun Kumar		60	Farmer	Protab		[Signature]
03	Mr. Arun Kumar		60	Farmer	Protab		[Signature]
04	Mr. Arun Kumar		60	Farmer	Protab		[Signature]
05	Mr. Arun Kumar		60	Farmer	Protab		[Signature]
06	Mr. Arun Kumar		60	Farmer	Protab		[Signature]
07	Mr. Arun Kumar		60	Farmer	Protab		[Signature]
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17	Mr. Arun Kumar		60	Farmer	Protab		[Signature]
18	Mr. Arun Kumar		60	Farmer	Protab		[Signature]
19	Mr. Arun Kumar		60	Farmer	Protab		[Signature]
20	Mr. Arun Kumar		60	Farmer	Protab		[Signature]
21	Mr. Arun Kumar		60	Farmer	Protab		[Signature]
22	Mr. Arun Kumar		60	Farmer	Protab		[Signature]
23	Mr. Arun Kumar		60	Farmer	Protab		[Signature]
24	Mr. Arun Kumar		60	Farmer	Protab		[Signature]
25	Mr. Arun Kumar		60	Farmer	Protab		[Signature]

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project

Local Government Engineering Department (LGED)

Public Consultation with Stakeholders

Name of Community Road: Boribari mouzan Asmoth Alir near Poeca Road. Date: 28-03-2026
Road ID: 149525200
Place of Consultation: Boribari mouzan Asmoth Alir near Poeca - Modhokhamar Holokhan
Village: Boribari/Venver Road No.: 06/05 Union: Holokhana Upazila: Kurigram Sadar
District: Kurigram

✓ Public Consultation Participants List

Sl. No.	Name	Male/Female	Age	Occupation	Village/Address	Mobile No.	Signature
১	শ্রী: হারিদ্রা রায়		২০	চাকরি	বরগাতি		হারিদ্রা
২	শ্রী: হারিদ্রা রায়		২৫	চাকরি	"		হারিদ্রা
৩	শ্রী: জুবায়ের রায়		৩০	নাকি	বরগাতি		জুবায়ের
৪	শ্রী: মোহাম্মদ আলী		৪২	চাকরি	বরগাতি		মোহাম্মদ
৫	শ্রী: হারিদ্রা রায়		৩০	চাকরি	বরগাতি		হারিদ্রা
৬	শ্রী: হারিদ্রা রায়		৩০	চাকরি	বরগাতি		হারিদ্রা
৭	শ্রী: হারিদ্রা রায়		৪০	চাকরি	বরগাতি		হারিদ্রা
৮	শ্রী: হারিদ্রা রায়		৪০	চাকরি	বরগাতি		হারিদ্রা
৯	শ্রী: হারিদ্রা রায়		৩২	চাকরি	বরগাতি		হারিদ্রা
১০	শ্রী: হারিদ্রা রায়		৩৫	চাকরি	বরগাতি		হারিদ্রা
১১	শ্রী: হারিদ্রা রায়		৩৪	চাকরি	বরগাতি		হারিদ্রা
১২	শ্রী: হারিদ্রা রায়		৩২	চাকরি	বরগাতি		হারিদ্রা
১৩	শ্রী: হারিদ্রা রায়		৩৩	চাকরি	বরগাতি		হারিদ্রা
১৪	শ্রী: হারিদ্রা রায়		৩৫	চাকরি	বরগাতি		হারিদ্রা
১৫	শ্রী: হারিদ্রা রায়		৪০	চাকরি	বরগাতি		হারিদ্রা
১৬	শ্রী: হারিদ্রা রায়		৪৫	চাকরি	বরগাতি		হারিদ্রা
১৭	শ্রী: হারিদ্রা রায়		৩৩	"	"		হারিদ্রা
১৮	শ্রী: হারিদ্রা রায়		৩৩	"	"		হারিদ্রা
১৯	শ্রী: হারিদ্রা রায়		৪৫	"	"		হারিদ্রা
২০	শ্রী: হারিদ্রা রায়		৩৬	চাকরি	"		হারিদ্রা

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Local Government Engineering Department (LGED)
Public Consultation with Stakeholders

Name of Community Road: Kamanpara R/H-Bottola-Damondanga Date: 01-04-26
Road ID: 149615078 UP-office.
Place of Consultation: Kamanpara R/H - Bottola-Damondanga up-office.
Village: কামারপাড়া Ward No.: 04 Union: Damondanga Upazila: Nageswari
District: Kurigram.

Public Consultation Participants List

Sl. No.	Name	Male/Female	Age	Occupation	Village/Address	Mobile No.	Signature
১	শ্রী: শাহীন	Male	75	অবসর	কামারপাড়া		শাহীন
২	আব্দুল হামিদ	Male	63	মুন্সি (মামল)	৫		আব্দুল হামিদ
৩	আবুল কালাম	Male	55	জামা	৫		আবুল কালাম
৪	আবুল উল্লাহ	Male	50	কৃষি	৫		আবুল উল্লাহ
৫	আবুল হাশেম	Male	20	চাও	৫		আবুল হাশেম
৬	আবুল হাশিম	Male	20	চাও	৫		আবুল হাশিম
৭	আবুল হাশিম	Male	26	কৃষি	৫		আবুল হাশিম
৮	আবুল হাশিম	Male	45	চাকরি	৫		
৯	আবুল হাশিম	Male	49	চাকরি	৫		
১০	আবুল হাশিম	Male	28	কৃষি	৫		আবুল হাশিম
১১	আবুল হাশিম	Male	17	চাও	৫		আবুল হাশিম
১২	আবুল হাশিম	Male	55	কৃষি	৫		আবুল হাশিম
১৩	আবুল হাশিম	Male	35	কৃষি	৫		আবুল হাশিম
১৪	আবুল হাশিম	Male	55	কৃষি	৫		আবুল হাশিম
১৫	আবুল হাশিম	Male	42	কৃষি	৫		আবুল হাশিম
১৬	আবুল হাশিম	Male	30	কৃষি	৫		আবুল হাশিম
১৭	আবুল হাশিম	Male	68	কৃষি	৫		আবুল হাশিম
১৮	আবুল হাশিম	Male	৫০	কৃষি	৫		আবুল হাশিম
১৯	আবুল হাশিম	Male	28	কৃষি	৫		আবুল হাশিম
২০	আবুল হাশিম	Male	২৫	কৃষি	৫		আবুল হাশিম

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
Local Government Engineering Department (LGED)
Public Consultation with Stakeholders

Bottola Chowmoni Bazzar - Raizong up office.
Date: 01-04-26

Roll No: 149613016
Place of Consultation: *Bottola Chowmoni Bazzar - Raizong up Office.*

Village: *মুন্সিগাঁও* Ward No.: 02 Union: *বাগমারী* Upazila: *নান্দীয়া*
District: *কুষ্টিয়া*

Public Consultation Participants List

Sl. No.	Name	Male/Female	Age	Occupation	Village/Address	Mobile No.	Signature
১.	<i>আবুল কালাম</i>	male	৪৫	কৃষি	<i>মুন্সিগাঁও</i>		<i>আবুল কালাম</i>
২.	<i>নজরুল ইসলাম</i>	"	৪৪	কৃষি	"		<i>নজরুল ইসলাম</i>
৩.	<i>সুজন কান্তি</i>	"	৫৫	কৃষি	"		<i>সুজন কান্তি</i>
৪.	<i>আবুল কালাম</i>	"	৫৭	কৃষি	"		<i>আবুল কালাম</i>
৫.	<i>আবুল কালাম</i>	male	৫০	চাকরি	"		<i>আবুল কালাম</i>
৬.	<i>আবুল কালাম</i>	male	৫০	চাকরি	<i>মুন্সিগাঁও</i>		<i>আবুল কালাম</i>
৭.	<i>আবুল কালাম</i>	"	২৪	কৃষি	<i>মুন্সিগাঁও</i>		<i>আবুল কালাম</i>
৮.	<i>আবুল কালাম</i>	"	২৫	কৃষি	"		<i>আবুল কালাম</i>
৯.	<i>আবুল কালাম</i>	"	২৭	কৃষি	<i>মুন্সিগাঁও</i>		<i>আবুল কালাম</i>
১০.	<i>আবুল কালাম</i>	"	৩০	কৃষি	"		<i>আবুল কালাম</i>
১১.	<i>আবুল কালাম</i>	"	৩০	কৃষি	"		<i>আবুল কালাম</i>
১২.	<i>আবুল কালাম</i>	"	৩২	কৃষি	"		<i>আবুল কালাম</i>
১৩.	<i>আবুল কালাম</i>	"	৩০	কৃষি	"		<i>আবুল কালাম</i>
১৪.	<i>আবুল কালাম</i>	"	৪৫	কৃষি	"		<i>আবুল কালাম</i>
১৫.	<i>আবুল কালাম</i>	"	৫২	কৃষি	"		<i>আবুল কালাম</i>
১৬.	<i>আবুল কালাম</i>	"	২৭	কৃষি	"		<i>আবুল কালাম</i>
১৭.	<i>আবুল কালাম</i>	"	৫০	কৃষি	"		<i>আবুল কালাম</i>
১৮.	<i>আবুল কালাম</i>	"	৩৫	কৃষি	"		<i>আবুল কালাম</i>

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Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project

Local Government Engineering Department (LGED)

Public Consultation with Stakeholders

Name of Community Road: Boravita bazar To Paschim Dhaniram GPS Date: _____

Road ID: 149184074

Place of Consultation: _____

Village: Barabhatta

Ward No.: 06

Union: Barabhatta

Upazila: Phulbari

District: Kurigram

Public Consultation Participants List

Sl. No.	Name	Male/Female	Age	Occupation	Village/Address	Mobile No.	Signature
01	আবু নার -	Male	82	কৃষি	কুড়িয়া		
02	শ্রী প্রজ্ঞা কুমার -	"	৩৮	দোকানদার	দুর্গা কুড়িয়া		
03	শ্রী: সার্বজনীন সৈয়দ	"	৪৫	কৃষি	"		
04	" সত্যু সৈয়দ	"	২৮	কৃষি	"		
05	" আমজিদ সত্যু -	"	২৬	ছাত্র	কুড়িয়া		
06	" সমুদ্র সৈয়দ	"	২৫	বেকার	দুর্গা কুড়িয়া		
07	" সমুদ্র সৈয়দ	Male	৬৫	কৃষি	"		
08	" ফাহিম খান -	"	৬২	কৃষি	"		
09	শ্রী: প্রজ্ঞা কুমার -	"	৪২	গৃহস্বা	কুড়িয়া		
10	শ্রী: সত্যু সৈয়দ	"	৫০	গৃহস্বা	দুর্গা কুড়িয়া		
11	শ্রী: সত্যু সৈয়দ	"	৬০	কৃষি	দুর্গা কুড়িয়া		
12	সত্যু সৈয়দ	"	৬৮	কৃষি	কুড়িয়া		
13	শ্রী: কৃষ্ণ কুমার -	Male	৪২	কৃষি	কুড়িয়া		
14	শ্রী: সত্যু সৈয়দ	"	২৫	গৃহস্বা	কুড়িয়া		
15	" সত্যু সৈয়দ	"	৪৮	কৃষি	কুড়িয়া		
16	" সত্যু সৈয়দ	"	৪৫	গৃহস্বা	কুড়িয়া		
17	শ্রী: সত্যু সৈয়দ	"	৪৮	চাকরি	দুর্গা কুড়িয়া		
18	" সত্যু সৈয়দ	"	৫২	মিস্ত্রি	কুড়িয়া		
19	" সত্যু সৈয়দ	"	৫০	কৃষি	কুড়িয়া		
20	" সত্যু সৈয়দ	"	৫৮	গৃহস্বা	দুর্গা কুড়িয়া		

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project

Local Government Engineering Department (LGED)

Public Consultation with Stakeholders

Name of Community Road: Barabita up at omer Tapoti - Ansa Bazar -
Road ID: 140184094 Barolay Bazar via Bulbul Khandakar house Date:

Place of Consultation:

Village: Naudabos

Ward No.: 08

Union: Barabita

Upazila: Phulbari

District: Kurigram

Public Consultation Participants List

Sl. No.	Name	Male/Female	Age	Occupation	Village/Address	Mobile No.	Signature
01	শ্রী: ববিন মিয়া	male	২৬	কৃষি	পশ্চিম নদিয়া		ববিন
02	শ্রী: মতিবর মাসাম	male	৩৬	কৃষি	"		মতিবর
03	" উৎসব খান্নি	male	৪০	শ্রমিক	পশ্চিম নদিয়া		উৎসব
04	" হুমুন-খর মিয়া	"	৪৫	কৃষি	"		হুমুন
05	" মাহিদুল ইসলাম	"	৪০	শ্রমিক	পশ্চিম নদিয়া		মাহিদুল
06	" মিনন মিয়া	"	৬০	কৃষি	নদিয়া		মিনন
07	" আবুল কালাম	"	৬৫	কৃষি	পশ্চিম নদিয়া		আবুল
08	" মাহিদুল ইসলাম	"	২৫	শ্রমিক	"		মাহিদুল
09	" হুমুন মিয়া	"	৬২	শ্রমিক	"		হুমুন
10	" মাহিদুল ইসলাম	"	৬৬	কৃষি	নদিয়া		মাহিদুল
11	" মাহিদুল মিয়া	"	"	কৃষি	নদিয়া		মাহিদুল
12	শ্রী: মাহিদুল	"	"	কৃষি	নদিয়া		শ্রী: মাহিদুল
13	শ্রী: মাহিদুল ইসলাম	male	৪২	কৃষি	নদিয়া		শ্রী: মাহিদুল
14	" হুমুন মিয়া	"	"	কৃষি	"		হুমুন
15	শ্রী: উৎসব খান্নি	"	৫৪	কৃষি	নদিয়া		শ্রী: উৎসব
16	" মাহিদুল ইসলাম	"	৬০	কৃষি	নদিয়া		মাহিদুল
17	শ্রী: মাহিদুল ইসলাম	"	৪৫	শ্রমিক	পশ্চিম নদিয়া		শ্রী: মাহিদুল
18	শ্রী: মাহিদুল ইসলাম	"	৪৬	কৃষি	"		শ্রী: মাহিদুল
19	শ্রী: মাহিদুল ইসলাম	"	৫৫	কৃষি	"		শ্রী: মাহিদুল
20	" মাহিদুল ইসলাম	"	৫২	কৃষি	"		মাহিদুল

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project

Local Government Engineering Department (LGED)

Public Consultation with Stakeholders

Name of Community Road: Hariswer taluk - Sindurmatind Date: 01.04.2026

Road ID: 149775028

Place of Consultation:

Village: HARISWER TALUK Ward No.: 02

Union: RAJARHAT

Upazila: RAJARHAT

District: KURIGRAM

Public Consultation Participants List

Sl. No.	Name	Male/Female	Age	Occupation	Village/Address	Mobile No.	Signature
01	MD. AMIKUL ISLAM	MALE	50	TEACHER	HARISWER TALUK		
02	MD. HABIBUL ISLAM	MALE	47	LECTURER	HARISWER TALUK		
03	MD. SIRAJUL ISLAM	MALE	56	TEACHER	HARISWER TALUK		
04	MST. RIKA KHATUN	FEMALE	43	HOUSEWIFE	HARISWER TALUK		
05	MST. SAIFUNNAHAR SHIMU	FEMALE	29	TEACHER	HARISWER TALUK		
06	MOULABI SIRAJUL ISLAM	MALE	59	TEACHER	HARISWER TALUK		
07	MD. RAFIQUUL ISLAM	MALE	45	TEACHER	HARISWER TALUK		
08	MAULANA RAFIQUUL ISLAM	MALE	44	PRINCIPAL	HARISWER TALUK		
09	KAMRUNKA HARB KONA	FEMALE	30	HOUSEWIFE	HARISWER TALUK		
10	MST. EMDADUNNAHAR AMILY	FEMALE	47	HOUSEWIFE	HARISWER TALUK		
11	MST. MALERA BEGUM	FEMALE	59	HOUSEWIFE	HARISWER TALUK		
12	MST. MORJINA BEGUM	FEMALE	35	HOUSEWIFE	HARISWER TALUK		
13	MD. SHAH JAMAL	MALE	40	FARMER	HARISWER TALUK		
14	MD. SOHRAB ALI	MALE	49	TEACHER	HARISWER TALUK		
15	MD. SOLAYMAK ALI	MALE	59	HEALTH WORKER	HARISWER TALUK		
16	MD. MIJANUR RAHMAN	MALE	32	SERVICE	HARISWER TALUK		
17	MD. TAJUL ISLAM	MALE	55	TEACHER	HARISWER TALUK		
18	MD. ABDUL KAFI	MALE	65	TEACHER	HARISWER TALUK		
19	JAMEATUL ISLAM RIKA	FEMALE	26	STUDENT	HARISWER TALUK		
20	MST. SHIRINA BEGUM	FEMALE	30	HOUSEWIFE	HARISWER TALUK		