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



Environmental & Social Assessment and Management Report of Community Roads

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ABBREVIATIONS

BBS	Bangladesh Bureau of Statistics
BDT	Bangladeshi Taka
BMD	Bangladesh Meteorological Department
BOQ	Bill of Quantity
DPHE	Department of Public Health Engineering
EA	Environmental & Social
ECR	Environmental Conservation Rules, 1997
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
UNDP	United Nations Development Programme
WB	World Bank

Executive Summary

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

Under this sub-project, eight (8) community infrastructures connecting roads in Gopalganj District will be improved to provide safe and sustainable access to nearby flood shelters and essential social infrastructure. The roads are located in three upazilas- Kotalipara (5 roads with total length of 3.101 km), Tungipara (2 roads with total length of 2.94 km), and Muksudpur (1 road with active length of 1.455 km) Upazila-which are characterized by rural settlements, agricultural landscapes, and periodic exposure to seasonal flooding.

A short profile of the roads to be implemented					
Sl. No.	Name of Upazila	Name of Proposed Community Road (Road ID)	Total Length (Km)	Avg. width (m)	Distances from nearby Shelters
1.	Kotalipara	Bandhabari-Bhai Bhai Bazar Road to Hasua GPS road (335515189)	0.6	2.7	10.0 km
2.		Pinjuri School to Gopalpur Sluice Gate (335514053)	0.126	2.5	3.0 km
3.		Kandi-Chowdhorihat Road to Pochim Dumuria Moktob via GPS road (335515199)	0.85	3.3	4.0 km
4.		Borua Bishna Mondir to Borua GPS Road (335515144)	0.382	1.8	3.50 km
5.		Radhaganj Biswas Bari Road to Bhangerhat Road (335514004)	1.143	3.300	7.0 km
6.	Tungipara	Joaria Bazar RHD Sitla Mondir-Mitradanga RHD (Bridge) (335914076)	1.6	4.528	350 m
7.		Dumuria UP office- Pakurtia Bazar Road (335913006)	1.34	4.694	500 m
8.	Muksudpur	Gadar Vajondi GPS to Baksha Khola road via golger munshi house road (335584200)	1.455	3.2	8.0 km

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 **Bandhabari-Bhai Bhai bazar road to Hasua GPS road (335515189)**, bituminous carpeting will be carried out along the entire stretch from **chainage 0+000 to 0+600**, where the existing pavement is damaged and broken. This road passes through homestead areas, agricultural land, at least 7 ponds on both sides, a Government Primary School, mosques and a electric pole. Along with the general road improvement works, Road safety measures, including signage and speed breakers, will be installed near the school at Ch. 0+300 and the mosque at Ch. 0+600.
- (ii) **Pinjuri School to Gopalpur Sluice gate (335514053)**, passes through agricultural lands, houses, school, bazar and 1 pond, and a electric pole is also located along the road. Along with the proposed bituminous carpeting from **chainage 0+000 to 0+126**, road signage & speed breakers will be installed near school at Ch. 0+126.
- (iii) Bituminous carpeting will be implemented from **chainage 0+000 to 0+850** on the road, which stretches from **Kandi-Chowdhorihat Road to Pochim Dumuria Moktob via GPS road (335515199)** through a solar lamp post, stretches of trees, agricultural lands, households, at least 4 ponds, electric poles, a school and so on. In addition, slope protection works will be carried out through Ch. 0+000 to 0+850, road signage & speed breakers will be installed near school at Ch. 0+378 & mosque Ch. 0+685.
- (iv) For the road from **Borua Bishna Mondir to Borua GPS Road (335515144)**, bituminous carpeting will be implemented along the entire stretch from **chainage 0+000 to 0+382**, and the road passes through different establishment and physical features on both sides, such as a school, temple, stretches of houses, stretches of agricultural lands, a canal. Road safety features, including signage and speed breakers, will be installed at schools (Ch. 0+360), a mandir (Ch. 0+600).
- (v) The proposed works for the road section from **Radhaganj Biswas Bari Road to Bhangarhat Road (Road ID: 335514004)** include the provision of bituminous carpeting over the **chainage from 0+000 to 1+143**. The road passes through different socio-

environmental features and establishments, such as stretches of human settlements and agricultural lands, mosques, graveyards, madrasas, five ponds and two canals, a government primary school and two bridges. In order to ensure road safety and mitigate potential hazards, appropriate traffic safety measures shall be implemented, e.g., the installation of regulatory and warning signage, along with speed breakers in the vicinity of the school (0+485) Graveyard (0+600), Road Signage for Madrasa (1+139).

- (vi) For the road from **Joaria Bazar RHD Sitla Mondir- Mitradanga RHD (Bridge) (335914076)**, bituminous carpeting will be carried out from **chainage 0+000 to 1+600**. The road passes through different socio-environmental features and establishments, such as stretches of households, agricultural lands, hat bazar, river. Besides the road improvement works, road safety signage and speed breakers will be installed near bazar (Ch. 2+996-3+096).
- (vii) For the road from **Dumuria UP office- Pakurtia Bazar Road (335913006)**, bituminous carpeting will be undertaken from **chainage 0+000 to 1+340**. The road passes through different socio-environmental features and establishments, such as stretches of big old trees, UP Office, temple, a high school, river. Road signage will be installed near the UP Office at Ch. 0+300 and Road Signage speed breaker for School & Community Hospital (0+300).
- (viii) Finally, for the road from **Gadar Vajondi GPS to Baksha Khola road via golger munshi house road (335584200)**, bituminous carpeting will be implemented from **chainage 0+000 to 1+455**. The road passes through different socio-environmental features and establishments, such as agriculture land, human settlement, four ponds and big old trees, a mosque. Safety features, including signage and speed breakers, will be installed near a mosque location (Ch. 1+200).

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

Sl. No.	Name of Proposed Community Road	Pavement Condition with Chainage	Proposed Physical Interventions	Specific HSE measures	Key Potential Impacts
1.	Bandhabari-Bhai Bhai bazar road to Hasua GPS road (335515189)	Damaged/broken Paved- 0+000 to 0+600	Bituminous Carpeting (BC)- 0+000 to 0+600, (Width – 3m) L/S R.C.C. palisading measuring 25 m × 3 m from Chainage (Ch.) 0+03 m to Ch. 0+280 m, L/S R.C.C. palisading measuring 30 m × 3 m at Ch. 30 m, L/S R.C.C. palisading measuring 26 m × 3 m at Ch. 26 m, R/S R.C.C. palisading measuring 42 m × 3 m at Ch. 42 m, R/S R.C.C. palisading measuring 12 m × 3 m at Ch. 12 m, R/S R.C.C. palisading measuring 18 m × 3 m at Ch. 18 m, and R/S R.C.C. palisading measuring 14 m × 3 m at Ch. 14 m.	Road signage and speed breaker for School (0+300); road signage for Mosque (0+600)	Air, water and soil pollution from Construction works; temporary setback in pedestrians' movement, OHS issues of workers.
2	Pinjuri School to Gopalpur Sluice gate (335514053)	Damaged/broken Paved- 0+000 to 0+126	Bituminous Carpeting (BC)- 0+000 to 0+126, (Width – 2.5m) L/S Brick Palisading measuring 96 meters by 3 meters, extending from Chainage (Ch.) 0+00 m to Ch. 0+96 m, and L/S R.C.C. Palisading measuring 27 meters by 7 meters, extending from Ch. 0+99 m to Ch. 0+126 m.	Road signage and speed breaker for School (0+126)	Air, water and soil pollution from Construction works; OHS and SEA/SH issues among workers and locals, tree plantation.
3.	Kandi-Chowdhorihat Road to Pochim Dumuria Moktob via GPS road (335515199)	Damaged/broken Paved- 0+000 to 0+850	Bituminous Carpeting (BC)- 0+000 to 0+850, (Width – 3.3m) R.C.C. and L/S Palisading along the road, including 30 m × 3 m from Chainage (Ch.) 0+00 m to Ch. 0+30 m, 21 m × 3 m from Ch. 0+29 m to Ch. 0+50 m, 49 m × 3 m from Ch. 0+147 m to Ch. 0+196 m, 45 m × 3 m from Ch. 0+250 m to Ch. 0+295 m, 43 m × 3 m from Ch. 0+303 m to Ch. 0+346	Road signage and speed breaker for School Ch. (0+378) & Mosque (0+685)	Temporary obstacles in pedestrians' movement, OHS and SEA/SH issues among workers and locals, tree plantation.

Sl. No.	Name of Proposed Community Road	Pavement Condition with Chainage	Proposed Physical Interventions	Specific HSE measures	Key Potential Impacts
			m, 20 m × 3 m from Ch. 0+597 m to Ch. 0+617 m, 115 m × 3 m from Ch. 0+650 m to Ch. 0+765 m, 29 m × 3 m from Ch. 0+702 m to Ch. 0+731 m, 8 m × 3 m from Ch. 0+790 m to Ch. 0+798 m, and 20 m × 3 m from Ch. 0+830 m to Ch. 0+850 m.		
4.	Borua Bishna Mondir To Borua GPS Road (335515144)	Damaged/broken Paved- 0+000 to 0+382	Bituminous Carpeting (BC)- 0+000 to 0+382, (Width – 3.0m) R.C.C. Palisading L/S measuring 7.0 m × 2.5 m at Chainage (Ch.) 7 m, R/S measuring 13 m × 5 m at Ch. 13 m, and Brick Palisading measuring 34 m × 4 m at Ch. 360 m.	Road Signage and speed breakers for School (0+360), Road Signage and speed breakers for Mandir (0+600),	Air, water and soil pollution from Construction works; OHS and SEA/SH issues among workers and locals, tree removal.
5.	Radhaganj Biswas Bari Road to Bhangarhat Road (Road ID: 335514004)	Damaged/broken Paved- 0+000 to 1+143	Bituminous Carpeting (BC)- 0+000 to 1+143, (Width – 3 .0m) R.C.C. palisading : 57.02 m × 4 m (Right Side) section from Chainage (Ch.) 0– 57.02 m, and a 65.0 m × 3 m (Left Side) section from Ch. 0–65.0 m. Additional palisading works include a 30 m × 4 m (Right Side) section at Ch. 75–105 m, a 17 m × 4 m (Left Side) section at Ch. 143–160 m, and a 22 m × 4 m (Left Side) section at Ch. 168–190 m. Further, a 24 m × 4 m (Right Side) section is proposed at Ch. 398–422 m. In the later sections of the alignment, palisading works include a 79 m × 3 m (Left Side) section from Ch. 770–849 m, a 49 m × 3 m (Right Side) section from Ch. 951–1000 m, and	Road Signage and speed breaker for School (0+485) Graveyard (0+600), Road Signage for Madrasa (1+139)	Air, water and soil pollution from Construction works; temporary obstacles in pedestrians' movement.

Sl. No.	Name of Proposed Community Road	Pavement Condition with Chainage	Proposed Physical Interventions	Specific HSE measures	Key Potential Impacts
			a 132 m × 3 m (Left Side) section from Ch. 951–1083 m. A final 28 m × 3 m (Right Side) section is included from Ch. 1020–1048 m.		
6.	Joaria Bazar RHD Sitla Mondir- Mitradanga RHD (Bridge) (335914076)	Damaged/broken Paved- 0+000 to 1+600	BC - 0+00 to 0+1600 (Width – 3.0 m) Palisading/slope protection measuring 37 m on the left side (L/S) from Chainage (Ch.) 2033 m to 2096 m. In addition, palisading works include 35 m on the left side at Ch. 2136 m to 2171 m, 60 m on the right side (R/S) at Ch. 2126 m to 2186 m, and 38 m on both sides (B/S) at Ch. 2226 m to 2264 m. Further sections comprise 15 m of palisading on the right side at Ch. 2426 m to 2441 m, and 87 m on the left side at Ch. 2561 m to 2648 m	Speed breaker for Bazar (2+996-3+096)	Air, water and soil pollution from Construction works; OHS and SEA/SH issues among workers and locals, tree removal.
7.	Dumuria UP office- Pakurtia Bazar Road (335913006)	Damaged/broken Paved- 0+000 to 1+340	Bituminous Carpeting (BC)- 0+000 to 1+340, (Width – 3.0m) Palisading/slope protection: 90 m long section on the left side (L/S) from Chainage (Ch.) 250 m to 340 m, a 13 m section on the right side (R/S) from Ch. 277 m to 290 m, a 45 m L/S section from Ch. 395 m to 440 m, and an 8 m L/S section from Ch. 478 m to 486 m. Additional works include an 18 m L/S section from Ch. 790 m to 808 m, a 14 m L/S section from Ch. 865 m to 879 m, and a 97 m L/S section from Ch. 928 m to 1025 m. Further, palisading will be provided	Road Signage for UP Office (0+300), and Road Signage speed breaker for School & Community Hospital (0+300).	Temporary obstacles in pedestrians' movement, OHS and SEA/SH issues among workers and locals, tree removal.

Sl. No.	Name of Proposed Community Road	Pavement Condition with Chainage	Proposed Physical Interventions	Specific HSE measures	Key Potential Impacts
			on the right side with a 14 m section from Ch. 984 m to 998 m, a 5 m section from Ch. 1095 m to 1100 m, and another 14 m section from Ch. 1129 m to 1143 m. On the left side, additional sections include 25 m from Ch. 1152 m to 1177 m and 54 m from Ch. 1184 m to 1330 m		
8	Gadar Vajondi GPS to Baksha Kholra road via golger munshi house road (335584200)	Damaged/broken Paved- 0+000 to 1+455	Bituminous Carpeting (BC)- 0+000 to 1+455, (Width 3.20m) Culvert slope protection with palisading measuring 28 m × 5 m at Chainage (Ch.) 500 m, along with slope protection with palisading measuring 18 m × 5 m at Ch. 552 m, 25 m × 5 m at Ch. 945 m, 24 m × 5 m at Ch. 970 m, and 23 m × 5 m at Ch. 1328 m	Road Signage & speed breaker for Mosque (1+200)	Air, water and soil pollution from Construction works; temporary obstacles in pedestrians' movement.

Despite the substantial socio-economic benefits the project will bring, certain construction-phase activities, such as earthworks, excavation, and material handling, are likely to cause localized soil disturbance, potential erosion, and impacts on roadside vegetation. The removal of trees and clearing of vegetation may temporarily affect the ecological balance and visual landscape, while also contributing to minor habitat disruption. In addition, construction near water bodies poses a risk of water contamination due to sediment runoff, improper waste disposal, or accidental spillage of construction materials. Air and noise pollution are anticipated due to vehicular movement, operation of construction machinery, and material transport, which may affect nearby residents, educational institutions, and health facilities. These activities may also cause temporary disruption to traffic flow and pedestrian movement, limiting access to homes, schools, and community services. In areas with dense human settlements or educational institutions, there is an increased risk of accidents, as well as occupational health and safety (OHS) concerns for workers and the public. Furthermore, the presence of a mobile workforce introduces potential risks related to Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH), which require careful management. Additional impacts include temporary social inconvenience, restricted access to local infrastructure, and safety hazards associated with open excavations, movement of heavy vehicles, and ongoing construction operations. The dismantling and relocation of electric poles may also temporarily interrupt utility services if not properly coordinated. All these impacts are very localized and mostly avoidable and do not pose any significant threat or harm to local inhabitants or biodiversity, if general good engineering and OHS practices are adopted. Therefore,

the overall risk for this sub-project can be categorized as 'Moderate'. No ethnic groups are found living within the catchment area and there is no risk of involuntary resettlement or loss of common property resources.

To address these potential impacts, a comprehensive Environmental and Social Management Plan (ESMP) has been developed as part of this report in **Annexure-1**. The ESMP outlines specific mitigation and management measures that must be implemented during project construction and operation phases. Key environmental mitigation measures include regular water spraying to control dust, proper maintenance of construction equipment to minimize noise and emissions, safe disposal and management of construction wastes, and restoration of disturbed areas following construction activities. Where roadside trees need to be removed, compensatory plantation programs will be undertaken to restore local vegetation and maintain ecological balance. Traffic management options, including signage, barricading, and designated detours, will be enforced to ensure safe movement of vehicles and pedestrians. 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. Contractors will also be required to ensure proper occupational health and safety measures for workers, including the use of personal protective equipment (PPE), training on workplace safety, and emergency preparedness.

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

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

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

1. INTRODUCTION

1.1 Sub-Project Background

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

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

The project area covers three (03) upazilas of Gopalganj District, namely - Kotalipara Upazila, Tungipara Upazila & Muksudpur Upazila. These upazilas are predominantly rural and depend heavily on agriculture and local trade for livelihoods. However, many villages within these areas experience difficulties in accessing reliable transportation infrastructure, especially during the monsoon season when roads often become submerged, damaged, or impassable due to floodwaters. As a result, communities frequently face challenges in reaching schools, healthcare centers, markets, and emergency shelters during extreme weather events.

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

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

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

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

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

The findings and recommendations presented in this report will guide project authorities, contractors, and relevant stakeholders in implementing the sub-project while minimizing environmental disturbances, protecting local communities, and maximizing the long-term benefits of improved community infrastructure in Gopalganj 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 Gopalganj District. Ultimately, the sub-project contributes to both short-term safety and long-term sustainable development of rural infrastructure, ensuring that flood shelters remain accessible and that the livelihoods of local residents are protected and enhanced.

1.3 Scope of the Project

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

1.4 Objectives of the Report

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

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

2.0 SUB-PROJECT LOCATION AND DESCRIPTION

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

2.1 Sub-Project Location

The sub-project covers selected community roads located in Gopalganj District, which is in the south-central part of Bangladesh and is prone to seasonal flooding and waterlogging due to its low-lying floodplain topography, heavy monsoon rainfall, and proximity to numerous rivers and canals. The sub-project specifically targets three (03) upazilas:

1. **Kotalipara Upazila** – A mainly rural upazila characterized by scattered settlements, widespread agricultural fields, wetlands, and small local markets. The community roads in this area serve as vital links to villages, marketplaces, educational institutions, and flood shelters, while enabling movement within low-lying areas that are highly susceptible to flooding and waterlogging.
2. **Tungipara Upazila** – Characterized by low-lying floodplain terrain and extensive agricultural land, this upazila experiences seasonal flooding and waterlogging during the monsoon. The connecting roads targeted under this sub-project are essential for linking villages with local markets, schools, health facilities, and nearby flood shelters.
3. **Muksudpur Upazila** – A predominantly rural upazila with pockets of semi-urban growth, characterized by low-lying floodplain terrain and extensive agricultural activity. The connecting roads targeted here link local communities with markets, schools, health

facilities, and nearby flood shelters, enhancing both daily accessibility and emergency response capacity in flood- and waterlogging-prone areas.

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

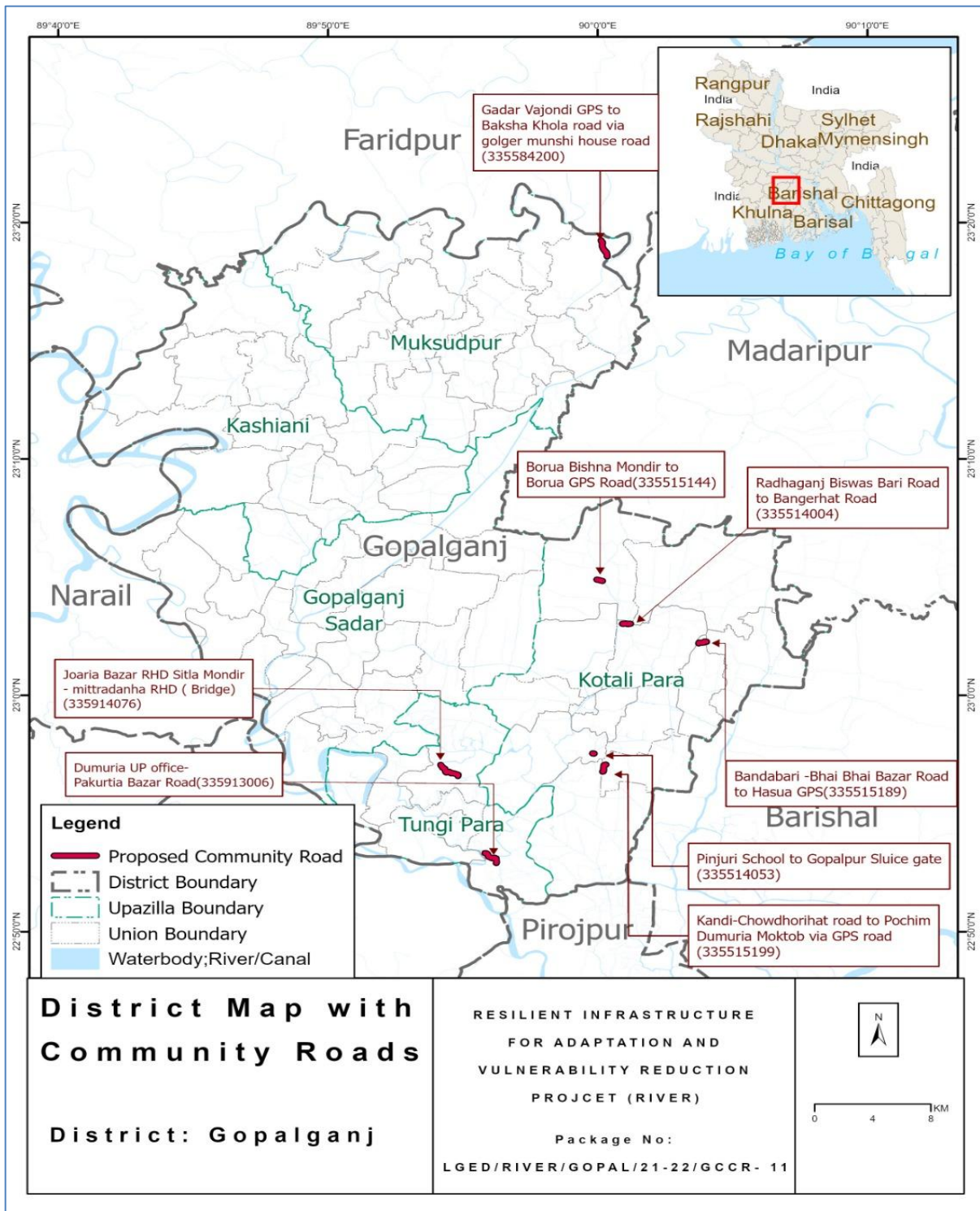


Figure 2.1: Map illustrating Community Roads of Gopalganj District

2.2 Physical Features and Environment

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

2.3 Socio-Economic Context

The project area in Gopalganj District is predominantly rural in nature, with the majority of the population engaged in agriculture, supplemented by fisheries and small-scale trade. The district's economy is largely agro-based, supported by fertile floodplain lands and an extensive network of rivers and canals, including the Madhumati and Kumar river systems, which also contribute to inland fisheries and water-dependent livelihoods. Key social features along the proposed road corridors include:

- Local settlements and dispersed rural homesteads across numerous villages
- Agricultural lands, wetlands, and small local marketplaces (growth centers)
- Educational institutions, including primary schools, secondary schools, colleges, and madrasas
- Religious institutions such as mosques and madrassas
- Public infrastructure such as community centers and flood shelters

These roads are critical for socio-economic development, as they facilitate access to essential services such as education, healthcare, and markets, while also supporting local trade and mobility. Furthermore, given the district's low-lying floodplain characteristics and susceptibility to seasonal flooding and waterlogging, these road networks play a vital role in ensuring connectivity to flood shelters and enabling timely evacuation during emergencies. Their improvement under the sub-project will significantly enhance disaster preparedness, response capacity, and overall resilience of local communities.

2.4 Sub-Project Description

The sub-project in **Gopalganj District** involves the improvement and rehabilitation of existing community and shelter-connecting roads to enhance climate resilience, structural stability, and year-round accessibility. The interventions are aligned with the LGED RIVER Project framework, which focuses on strengthening rural connectivity and disaster preparedness in flood-prone areas through the upgrading of existing infrastructure within established alignments. Key components of the road improvement works include:

- **Road Surface Improvement** – Upgrading existing earthen and partially paved roads through earthwork, compaction, and application of appropriate surfacing (e.g., WBM and bituminous treatments) to ensure all-weather usability and improved ride quality.

- **Road Widening and Shoulder Stabilization** – Selective widening within the existing Right of Way (ROW), along with shoulder strengthening, to support safer two-way movement of vehicles and pedestrians while maintaining alignment with existing road geometry.
- **Drainage Enhancement** – Construction, rehabilitation, and upgrading of drainage structures, including side drains, culverts, and small bridges, to improve hydraulic performance, reduce waterlogging, and maintain road durability in low-lying floodplain conditions.
- **Slope Protection and Embankment Strengthening** – Implementation of embankment stabilization measures such as turfing, protective works, and compaction to minimize erosion and protect road infrastructure during seasonal flooding.
- **Traffic Safety Measures** – Installation of road safety features including signage, markings, and localized traffic management measures near sensitive receptors such as schools, markets, religious institutions, and flood shelters to enhance user safety during both construction and operation phases.

The sub-project is designed to minimize environmental and social impacts by prioritizing the use of existing road corridors and avoiding involuntary land acquisition, in accordance with the project's Environmental and Social Management Framework (ESMF). Construction activities will be carefully planned and phased to limit disruption to local communities, ensure continued access to essential services, and maintain connectivity to flood shelters, which is critical for emergency response in Gopalganj District's flood- and waterlogging-prone environment.

2.5 Elementary information of Community Road in Gopalganj District

The community road package components in Gopalganj District, located in the southern region of Dhaka Division, have been identified under the RIVER Project to improve rural connectivity and facilitate access to nearby flood shelters and community facilities. The proposed community roads fall within the project influence area of several flood shelter construction sites located in different upazilas such as Kotalipara Upazila, Tungipara Upazila & Muksudpur Upazila. Each road component has been identified with specific GPS coordinates to define its alignment and location within the respective union parishads such as Hasua, Pinjuri, Suagram, Kolabari – (1), Radhaganj, Gopalpur, Dumuria, Dig Nogar unions etc. These community roads are strategically selected to connect surrounding rural settlements, growth centres 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.	Kotalipara	Hasua	Bandhabari-Bhai Bhai bazar road to Hasua GPS road (335515189)	<u>Starting Point</u> 23.03776 N 90.06724 E <u>Ending Point</u> 23.03651 N 90.06563 E	0.6	Hasua, Narikel Bari, Bandhabari.	105 No. Bhutiria GPS	10 km From Proposed Flood Shelter.
2.		Pinjuri	Pinjuri School to Gopalpur Sluice gate (335514053)	<u>Starting Point</u> 22.95895" N 89.99783" E	0.25	Pinjuri, kurpala, South Goyalongko.	111 No. Sonatia GPS	3 km From Proposed Flood Shelter.

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Sl. No.	Name of Upazila	Union	Name of Proposed Community Road	GPS Coordinates	Total Length (Km)	Locations Under Project Influence Area	Nearby Proposed Flood Shelter	Distances from nearby Shelters
				Ending Point 22.95909" N 89.99678" E				
3.		Suagram	Kandi-Chowdhorihat Road to Pochim Dumuria Moktob via GPS road (335515199)	Starting Point 22.95119" N 90.00516" E Ending Point 22.94624" N 90.00265" E	0.85	Poschim Dumuria, Tarakandar, Pinjuri.	111 No. Sonatia GPS	4 km From Proposed Flood Shelter.
4.		Kolabari – (1)	Borua Bishna Mondir to Borua GPS Road (335515144)	Starting Point 23.08066" N 90.00307" E Ending Point 23.08161" N 89.99943" E	0.382	Kolabari, Borua, Nalua, Kauflabari.	143 No. Deshi Kadambari GPS	3.50 km From Proposed Flood Shelter.
5.		Radhaganj	Radhaganj Biswas Bari Road to Bhangherhat Road (335514004)	Starting Point 23.05016" N 90.0152" E Ending Point 23.05488" N 90.02176" E	1.143	Radhaganj, Digholia, Kolabari, Bhangherhat.	69 No. Shimul Bari GPS	7 km From Proposed Flood Shelter.

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Sl. No.	Name of Upazila	Union	Name of Proposed Community Road	GPS Coordinates	Total Length (Km)	Locations Under Project Influence Area	Nearby Proposed Flood Shelter	Distances from nearby Shelters
6.		Gopalpur	Joaria Bazar RHD Sitla Mondir- Mitradanga RHD (Bridge) (335914076)	<u>Starting Pointt</u> 22°57'03.72" N 89°54'10.61" E <u>Ending Point</u> 22°56'38.99" N 89°54'49.36" E	1.664	Gopalpur, Joaria, Mitradanga	8 No. Mitradanga GPS	350m From Proposed Flood Shelter.
7.	Tungipara	Dumuria	Dumuria UP office-Pakurtia Bazar Road (335913006)	<u>Starting Point</u> 22°57'19.91" N 89°55'47.63" E <u>Ending Point</u> 22°52'54.40" N 89°56'98" E	1.1	Dumuria, Choto Dumuria, Pakurtia	35 No. Dumuria GPS	500m From Proposed Flood Shelter.
8.	Muksudpur	Dig Nogor	Gadar Vajondi GPS to Baksha Khola road via golger munshi house road (335584200)	<u>Starting Point</u> 23.30936" N 90.00583" E <u>Ending Point</u> 23.32992" N 89.00203" E	1.5	Gadar Vajondi, Baksha Khola, Petvora, Chandpara.	Batika Mari GPS	8 km from Proposed Flood Shelter.

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

2.6 Environmental / Social Category of the Subproject

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

2.7 Baseline Conditions of the Community Road

The baseline assessment of the community roads under the sub-project in Gopalganj District provides a detailed understanding of the existing physical and social conditions, which serves as the foundation for planning road improvements while minimizing environmental and social impacts. The targeted roads pass through the upazilas of Kotalipara, Tungipara & Muksudpur.

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

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

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

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

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

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

Table 2.2 Status of Baseline Conditions of the Community Road

Sl. No.	Road Name	Road ID	Existing Pavement Condition with Chainage	Existing Structures on the road	Safeguard Features	Proposed Road Interventions
1.	Bandhabari-Bhai Bhai bazar road to Hasua GPS road (Village-B)	335515189	HBB- 0+000 to 0+280 m, 0+230 to 0+298 m (Ch. 97m) (Width 2.7m) Unpaved – 0+280 to 0+532 m (Ch. school link road) (Width 3m)	No structure available in the site	Not available in site	BC- 0+00 to 0+600 m Width – 3m L/S R.C.C. palisading measuring 25 m × 3 m from Chainage (Ch.) 0+03 m to Ch. 0+280 m, L/S R.C.C. palisading measuring 30 m × 3 m at Ch. 30 m, L/S R.C.C. palisading measuring 26 m × 3 m at Ch. 26 m, R/S R.C.C. palisading measuring 42 m × 3 m at Ch. 42 m, R/S R.C.C. palisading measuring 12 m × 3 m at Ch. 12 m, R/S R.C.C. palisading measuring 18 m × 3 m at Ch. 18 m, and R/S R.C.C. palisading measuring 14 m × 3 m at Ch. 14 m.
2	Pinjuri School to Gopalpur Sluice gate (Village-A)	335514053	HBB - 0+00 to 0+126 m (Ch. 126m) (Width – 2.5m)	No structure available in the site	Not available in site	BC-0+00 to 0+126 m Width – 2.5m L/S Brick Palisading measuring 96 meters by 3 meters, extending from Chainage (Ch.) 0+00 m to Ch. 0+96 m, and L/S R.C.C. Palisading measuring 27 meters by 7 meters, extending from Ch. 0+99 m to Ch. 0+126 m.
3.	Kandi- Chowdhorihat Road to Pochim Dumuria Moktob via GPS road (Village-B)	335515199	HBB- 0+100 to 0+170m, (Ch. 70m) (Width – 3m) Unpaved – 0+000 to 0+100 m (Ch. 100m) (Width – 3m), Unpaved – 0+170 to 0+850 m (Ch. 680m) (Width – 2.4m)	No structure available in the site	Not available in site	BC- 0+000 to 0+850 m Width – 3.3m R.C.C. and L/S Palisading along the road, including 30 m × 3 m from Chainage (Ch.) 0+00 m to Ch. 0+30 m, 21 m × 3 m from Ch. 0+29 m to Ch. 0+50 m, 49 m × 3 m from Ch. 0+147 m to Ch. 0+196 m, 45 m × 3 m from Ch. 0+250 m to Ch. 0+295 m, 43

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Sl. No.	Road Name	Road ID	Existing Pavement Condition with Chainage	Existing Structures on the road	Safeguard Features	Proposed Road Interventions
						m × 3 m from Ch. 0+303 m to Ch. 0+346 m, 20 m × 3 m from Ch. 0+597 m to Ch. 0+617 m, 115 m × 3 m from Ch. 0+650 m to Ch. 0+765 m, 29 m × 3 m from Ch. 0+702 m to Ch. 0+731 m, 8 m × 3 m from Ch. 0+790 m to Ch. 0+798 m, and 20 m × 3 m from Ch. 0+830 m to Ch. 0+850 m.
4.	Borua Bishna Mondir to Borua GPS Road (Village-B)	335515144	HBB - 0+000 to 0+382 m (Ch. 7m) (Width – 1.8m)	No structure available in the site	Not available in site.	BC-0+00 to 0+382 m Width – 3.0m R.C.C. Palisading L/S measuring 7.0 m × 2.5 m at Chainage (Ch.) 7 m, R/S measuring 13 m × 5 m at Ch. 13 m, and Brick Palisading measuring 34 m × 4 m at Ch. 360 m.
5.	Radhaganj Biswas Bari Road to Bhangarhat Road (Village-A)	335514004	HBB- 0+00 to 0+1+143 (Ch.236.3 m) (Width – 3.300m)	Palisading: L/S (31.0m × 4.5m) (Ch. 383 m), (35m × 3m) (Ch. 433 m); Bridge (30m × 4.6m) (Ch. 463 m), Palisading: R/S (31.0m × 4.5 m) (Ch. 695 m), Bridge: (21.0 m x4.6 m) (Ch. 716 m), Palisading (27.0 m x4.0m) (Ch. 743 m), Bridge: (9m x 4.6m) (Ch.858m) Culvert: (1.5m x 3m) (Ch. 998.5m)	Not available in site	BC- 0+00 to 1+143 (Width – 3 .0m) R.C.C. palisading : 57.02 m × 4 m (Right Side) section from Chainage (Ch.) 0–57.02 m, and a 65.0 m × 3 m (Left Side) section from Ch. 0–65.0 m. Additional palisading works include a 30 m × 4 m (Right Side) section at Ch. 75–105 m, a 17 m × 4 m (Left Side) section at Ch. 143–160 m, and a 22 m × 4 m (Left Side) section at Ch. 168–190 m. Further, a 24 m × 4 m (Right Side) section is proposed at Ch. 398–422 m. In the later sections of the alignment, palisading works include a 79 m × 3 m (Left Side) section from Ch. 770–849 m, a 49 m × 3 m (Right Side) section from Ch.

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Sl. No.	Road Name	Road ID	Existing Pavement Condition with Chainage	Existing Structures on the road	Safeguard Features	Proposed Road Interventions
				Bridge: (24.0m x2.5m) (Ch. 1139m)		951–1000 m, and a 132 m × 3 m (Left Side) section from Ch. 951–1083 m. A final 28 m × 3 m (Right Side) section is included from Ch. 1020–1048 m.
6.	Joaria Bazar RHD Sitla Mondir- Mitradanga RHD (Bridge) (Village-A)	335914076	Unpaved/Earthen- 0+00 to 1+600 (Ch.1600 m) (Width – 4.528m)	No structure available in the site	Not available in site	BC - 0+00 to 0+1600 (Width – 3.0 m) Palisading/slope protection measuring 37 m on the left side (L/S) from Chainage (Ch.) 2033 m to 2096 m. In addition, palisading works include 35 m on the left side at Ch. 2136 m to 2171 m, 60 m on the right side (R/S) at Ch. 2126 m to 2186 m, and 38 m on both sides (B/S) at Ch. 2226 m to 2264 m. Further sections comprise 15 m of palisading on the right side at Ch. 2426 m to 2441 m, and 87 m on the left side at Ch. 2561 m to 2648 m.
7.	Dumuria UP office- Pakurtia Bazar Road (UNR)	335913006	BC- 0+00 to 1+340 (Ch.1340 m) (Width – 3.0m)	Culverts: (4.24 m x2.34 m) (Ch. 405.0 m)	Not available in site	BC- 0+00 to 1+340 (Width – 3.0m) Palisading/slope protection: 90 m long section on the left side (L/S) from Chainage (Ch.) 250 m to 340 m, a 13 m section on the right side (R/S) from Ch. 277 m to 290 m, a 45 m L/S section from Ch. 395 m to 440 m, and an 8 m L/S section from Ch. 478 m to 486 m. Additional works include an 18 m L/S section from Ch. 790 m to 808 m, a 14 m L/S section from Ch. 865 m to 879 m, and a 97 m L/S section from Ch. 928 m to 1025 m. Further, palisading will be

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Sl. No.	Road Name	Road ID	Existing Pavement Condition with Chainage	Existing Structures on the road	Safeguard Features	Proposed Road Interventions
						provided on the right side with a 14 m section from Ch. 984 m to 998 m, a 5 m section from Ch. 1095 m to 1100 m, and another 14 m section from Ch. 1129 m to 1143 m. On the left side, additional sections include 25 m from Ch. 1152 m to 1177 m and 54 m from Ch. 1184 m to 1330 m
8.	Gadar Vajondi GPS to Baksha Khola road via golger munshi house road (Village-A)	335584200	HBB- 0+00 to 1+455m (Ch. 1455m) (Width 3.20m)	Culverts: (5 m x 3.6 m) (Ch. 500.0 m)	Not available in site	BC-0+00 to 1+455 m (Width 3.20m) Culvert slope protection with palisading measuring 28 m x 5 m at Chainage (Ch.) 500 m, along with slope protection with palisading measuring 18 m x 5 m at Ch. 552 m, 25 m x 5 m at Ch. 945 m, 24 m x 5 m at Ch. 970 m, and 23 m x 5 m at Ch. 1328 m

3.0 Environmental and Social Survey and Screening

3.1 Survey and Screening Methodology

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

3.2 Important features/establishments around the PIA

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

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

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

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

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

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

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

Overall, the surrounding features and establishments within the project influence area reflect the typical rural landscape and socio-economic structure of Gopalganj 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 2**, which provides a location-specific inventory of important features situated along or near the assessed road alignments. This inventory will help guide the implementation of appropriate mitigation measures and ensure that project activities are carried out in an environmentally and socially responsible manner.

Table 3.1: Important features under Project Influence Area

Division: Dhaka	District: Gopalganj	Upazila: Kotalipara	
Name of the Road:	Bandhabari-Bhai Bhai bazar road to Hasua GPS road (335515189)		
Total Road Length (Km)	0.6 km		
Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Pond, Residential house, Pond at a distance of 8.0m, 26 no. Hasua Govt. Primary School, Residential houses, from 280m earthen road begins.
		R	Cultivated land, Pond, Cultivated land, Pond, Road beside Lavlu Kazis Shop, Land
300-532	L		Pond, electric poles, Eliyas's shop, electric pole, Cultivated land, Residential houses,
		R	Residential houses, electric pole, Hasua Jame Mosque, cultivated land
Name of the Road:	Pinjuri School to Gopalpur Sluice gate (335514053)		
Total Road Length (Km)	0.126 km		
Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-126	L		Kotalipara to Dharabashail Main Road, adjacent to Chowdhury's Hat Bazar, Fish house beside the corner, (120m) Bridge.
		R	High School, electric pole by the roadside, Boundary wall of High School
Name of the Road:	Kandi-Chowdhorihat Road to Pochim Dumuria Moktob via GPS road (335515199)		
Total Road Length (km)	0.85 km		
Chainage	Orientation	Social/Economic/Cultural/Environmental Features	

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	(Left/Right)		(With distance from the centerline of the road)
00-300	L		Low-lying water body (ditch), Cultivated land, Pond, Residential houses.
		R	Residential houses, Pond, Residential houses.
300-600	L		Pond, Paddy field, Cultivated land with 2 houses in between.
		R	Residential houses, Cultivated land and residential houses.
600-850	L		Residential houses, Residential houses and Mosque, Residential houses.
		R	Pond, Building house, Electric pole, Cultivated land, Cultivated land.
Name of the Road:	Borua Bishna Mondir to Borua GPS Road (335515144)		
Total Road Length (km)	0.382km		
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)	
00-300	L		Kadambari to Gandiasur via Kaligonj, Buruya Village, residential houses, cultivated land, residential houses, land, residential houses and Momtaz's House
		R	canal width 25.0m and land, land, canal at 25.0 m distance and opposite of residential houses
300-600	L		Residential houses, school perimeter and towards north at 40.0 m distance Buruya Temple, and No. 98 Govt. Primary School
		R	Residential houses from canal (25.0 m width), school perimeter
Name of the Road:	Radhaganj Biswas Bari Road to Bhangarhat Road (335514004)		
Total Road Length (km)	1.143 km		
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)	
00-300	L		Pond, Residential house, Pond
		R	Pond, Temple (Lat: 23.05084, Long: 90.01763), Residential houses
300-600	L		(Residential houses, Residential houses, Bridge, 75no.Dighalia Government Primary School + Eidgah + Graveyard+Madrasha
		R	Residential houses, Mosque, Cultivated land, Canal (width 30.0 m, 25.0 m away from road), house at the junction
600-900	L		(Residential houses and land, Bridge, Canal, Residential houses
		R	Residential houses, canal, Bridge, Pond, Shop, Pond, Residential houses
900-1143	L		Land, Dighalia Madrasha 4.0m, Bridge, Bridge's slope at 1143 where Road ends, Robigaunj to Vangarhat road
		R	cultivated Land, Residential houses, cultivated Land, Bridge, Bridge's slope

Division: Dhaka	District: Gopalganj	Upazila: Tungipara
Name of the Road:	Joaria Bazar RHD Sitla Mondir- Mitradanga RHD (Bridge) (335914076)	
Total Road Length (km)	1.600 km	
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
1496	L	Agricultural Land and Fishpond
	R	Agricultural Land and Fishpond
1496 – 1796	L	Agricultural Land and Fishpond
	R	Road to River distance 10 m
1796 – 2096	L	Agricultural Land and Fishpond
	R	Road to River Distance 10 m
2096 – 2396	L	Agricultural Land and Fishpond
	R	River (95 m width) Road to River distance 06 m
2396 – 2696	L	Agricultural Land and Fishpond + chicken farm
	R	Agricultural Land and Fishpond + chicken farm
2696 – 2996	L	Agricultural Land and Fishpond
	R	House
2996 – 3096	L	Hat Bazar shops
	R	Hat Bazar shops + electric pole

Name of the Road:	Dumuria UP office- Pakurtia Bazar Road (335913006)	
Total Road Length (km)	1.340km	
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L	UP Office (Road to UP Office Distance-05m)
	R	High school (Distance-15m) GPS (Distance 10m) Mondir (Distance-01m) Big old Tree (Distance-03m) Hat-Bazar-shop (on the Road) Community Hospital (Distance-02m)
300-600	L	River (70m Width) Road to River Distance-05m
	R	Human Settlement
600-900	L	RIVER (80m Width) Road to River Distance-07m

		R	Human Settlement
900-1200	L		River (40m Width) Road to RIVER Distance-05m
		R	Human Settlement
1200-1340	L		River (60m Width) Road to River Distance-05m
		R	Human Settlement & Agricultural land.

Division: Dhaka	District: Gopalganj		Upazila: Muksudpur
Name of the Road:	Gadar Vajondi GPS to Baksha Khola road via golger munshi house road (335584200)		
Total Road Length (km)	1.455 km		
Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)	
00-300	L		Agricultural land.
		R	Agricultural land.
300-600	L		Agricultural land, pond land
		R	Agricultural land.
600-900	L		Big old trees, human Settlement, agricultural land.
		R	Big old trees, human Settlement, agricultural land.
900-1200	L		pond, human Settlement, Agricultural land, masjid (10 m)
		R	Pond, Big old trees, human settlement, shop 2 m, Agricultural land.
1200-1500	L		Human Settlement, agricultural land.
		R	pond, human Settlement, agricultural land.

(*Data Source: Field Survey, March 2026)

4.0 Environmental and Social Impacts and Proposed Mitigation and Enhancement Measures

4.1 Environmental and Social Impacts for the Implementation of works

The proposed community road improvement in Gopalganj District under the RIVER Project aim to rehabilitate and maintain existing rural road infrastructure to improve accessibility, disaster resilience, and socio-economic connectivity within the project influence area. Since the project interventions will mostly take place within the existing right-of-way of community roads, the anticipated environmental and social impacts are expected to be moderate,

temporary, and site-specific in nature. However, certain environmental and social risks may arise during the construction and operational phases that require appropriate mitigation and enhancement measures to ensure sustainable project implementation.

Environmental and Social protection and enhancement will be an integral component of the sub-projects. Environmental and Social Mitigation and Enhancement Measures to address potential environmental and community impacts during construction and operation phase. These measures will be implemented in accordance with the Environmental and Social Management Framework (ESMF) of the RIVER Project. Key mitigation measures will include dust suppression through regular water spraying, proper management of construction waste, control of noise during construction activities, and prevention of water pollution from construction materials or machinery. Social mitigation measures will focus on minimizing disruption to local communities living along the road corridors. Construction activities will be carefully scheduled to avoid blocking community access routes for long periods. Temporary access arrangements will be maintained where construction works interfere with local movement. Safety awareness will be promoted among workers and community members to reduce occupational and public health risks. Local labor will be encouraged where possible, which may contribute to temporary employment opportunities for nearby residents. Site specific Environmental Impacts and Mitigation Measures are described in **Table 4.1**.

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

Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
1.	Bandhabari-Bhai Bhai bazar road to Hasua GPS road	<ul style="list-style-type: none"> • Dust generation and air pollution during earthworks, transportation of construction materials, and road surface improvement which may affect nearby settlements and the area around Mosque. • Noise disturbance from construction machinery and vehicles, particularly affecting nearby residents and religious activities at the mosque. • Temporary disruption of local movement 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. 	<ul style="list-style-type: none"> • Regular water spraying on exposed soil and road surfaces, covering of 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.	Pinjuri School to Gopalpur Sluice gate	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Regular water spraying on exposed surfaces, covering of 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
		<p>nearby households, schools, and local religious establishments.</p> <ul style="list-style-type: none"> ● Temporary disruption to local traffic and pedestrian movement during culvert repair, earthworks, and road surface improvement. ● Potential drainage blockage and localized waterlogging due to damaged culverts or improper construction practices. 	<p>construction work during prayer times or school hours where feasible.</p> <ul style="list-style-type: none"> ● 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.	Kandi-Chowdhorihat Road to Pochim Dumuria Moktob via GPS road	<ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● 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.

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Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
4.	Borua Bishna Mondir To Borua GPS Road	<ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● Regular water spraying on exposed surfaces, covering of 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.	Radhaganj Biswas Bari Road to Bhangarhat Road	<ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● 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.

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Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
		<ul style="list-style-type: none"> ● 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. ● Potential cultural sensitivity issues near Narikelbari Eidgha and local community gathering areas. 	<ul style="list-style-type: none"> ● 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. ● Climate-resilient road design, improved drainage, and clear linkages with any Embankment and other shelters. ● Maintain buffer zones around religious or cultural sites, avoid construction activities during events, and consult local leaders before works.
6.	Joaria Bazar RHD Sitla Mondir- Mitradanga RHD (Bridge)	<ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● 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 schedule in advance, and coordinate temporary relocation or alternate access routes if required.

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Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
		<ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● Ensure road maintenance after construction, integrate road safety features, and promote roadside plantation for environmental enhancement.
7.	Dumuria UP office-Pakurtia Bazar Road	<ul style="list-style-type: none"> ● 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. ● Potential cultural sensitivity issues near local community gathering areas. 	<ul style="list-style-type: none"> ● 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. ● Climate-resilient road design, improved drainage, and clear linkages near the shelters. ● Maintain buffer zones around religious or cultural sites, avoid construction activities during events, and consult local leaders before works.

Sl. No.	Name of Community Road	Environmental and Social Impacts	Proposed Mitigation and Enhancement Measures
8.	Gadar Vajondi GPS to Baksha Khola road via golger munshi house road	<ul style="list-style-type: none"> ● 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 including 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. 	<ul style="list-style-type: none"> ● 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. ● 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.

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 Kotalipara, Tungipara and Muksudpur Upazilas. By integrating environmental and social considerations into every stage of project implementation, the ESMP ensures that the benefits of improved road infrastructure are maximized while negative impacts are systematically prevented, mitigated, and managed.

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

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

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

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

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

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>to any kinds of latrine and soaks well which could be contaminated by those.</p> <ul style="list-style-type: none"> • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place. • Sub project intervention must avoid natural disturbance to existing slop and natural drainage. • Existing utility services must be relocated or adjusted where they obstruct the works or pose a risk of damage, in close cooperation with the appropriate authority. • The contractor must ensure sound environment for the local residents near the sub project site. 		
Construction Activity	Noise from construction works	<ul style="list-style-type: none"> • Construction activities mostly shall finish at day time within 05:00 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kind of construction works. 	Contractor	Environmental Consultant of PIU

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		<ul style="list-style-type: none"> • 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. 		
Construction Activity	Dust	<ul style="list-style-type: none"> • Acceptable range of emission of CO, particulate matter [SPM (Suspended particulate matter), PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. • Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. • Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level. • Construction materials should be covered properly while carrying in vehicles to the site. 	Contractor	Environmental Consultant of PIU
Construction Activity	Safety Issues	<ul style="list-style-type: none"> • Unauthorized entry is completely prohibited in construction site and take necessary 	Contractor	Environmental Consultant of PIU

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

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		<ul style="list-style-type: none"> • Local traffic police department should be contacted, if traffic problem becomes more complex. 		
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	<ul style="list-style-type: none"> • Water sources (e.g., ground or surface water) for construction works will be determined in consultation with the local DPHE office, considering the availability of nearby resources and technical options, and potential risks of extracting water from the same sources used by other consumer groups especially during the critical period. • Water from any installed tubewell or an existing surface water bodies within the nearby places will be used for construction works, if the available water quality satisfies the required standards for construction works. • If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority need to be taken before extraction or setting up bore wells. • Any type of consent letter or agreement for withdrawing water from either surface or 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

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		<p>underground sources will be kept on site.</p> <ul style="list-style-type: none"> Local community must be consulted before any construction works start. 		
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> Maintain safety measures during the movement of heavy machinery and equipment. Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) Local community will be trained up on traffic management and awareness. 	Contractor	Environmental Consultant of PIU
Construction Activity	Labor Base Camp: Conflicts with the local residents	<ul style="list-style-type: none"> Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and 	Contractor	Social Development Specialist and Gender Specialist of PIU

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

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • 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. 		

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

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

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

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

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	<p>Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage:</p> <ul style="list-style-type: none"> • Pollution from waste materials. • Health & Safety risks to workers and local community. 	<ul style="list-style-type: none"> • Provision to proper measures of mitigation and monitoring to minimize or reduce the environmental and social impacts during demobilization, which are anticipated to be similar to those identified for the construction phase. Some of the measures include: (i)remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; (ii) ensure that all affected structures rehabilitated/compensated; (iii) the area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; (iv) all imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. • The contractor must arrange the cancellation of all temporary services. 	Contractor	Environmental Consultant of PIU/D&SC, district XEN.
Construction activity	Odours and pollution caused by leaking latrines and faecal	<ul style="list-style-type: none"> • Preventative maintenance schedule should be followed. 	Contractor	Environmental Consultant of PIU,

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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	<ul style="list-style-type: none"> • 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. 		Union Parishad Member
Pre-Construction and Construction Stage	Rigorous Monitoring and Report Preparation and Submission	<ul style="list-style-type: none"> • The Contractor shall appoint (i) ES Manager (ii) Env. Officer, (iii) Social Officer (iv) Community Organizer and (v) H&S Officer for strict management and monitoring of all ES related works at each site and the budget for this engagement shall be borne from the Contractor's management budget. • Contractor shall submit regular monthly monitoring report to the D&SC and PIU as per reporting standard set by the ES Consultants of D&SC/PIU. 	Contractor	Environmental Consultant of PIU
Operation & Maintenance	Road Safety. Impacts include: <ul style="list-style-type: none"> • The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The 	Road safety issues can be minimized in following ways: <ul style="list-style-type: none"> • 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
	<p>accidents may also be due to tiredness of drivers.</p> <ul style="list-style-type: none"> Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries. 	<ul style="list-style-type: none"> Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time. 		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light. 	UE	District 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 5.1: 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
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

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

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Sl. No.	ES Aspect / Issue	Monitoring Parameters / Indicators	Frequency / Timing	Responsibility	Means of Verification / Monitoring Method
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 trainings, on-site guidance, tool-box meetings, and awareness sessions help strengthen institutional

capacity, improve coordination, and ensure that sustainability and gender equity principles are integrated into project planning, implementation, and monitoring.

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

Table 5.2: 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
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

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

5.5 Tree Plantation Plan

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

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

The initiative aims to restore biodiversity, enhance greenery, prevent erosion, improve aesthetics, and ensure long-term environmental sustainability while supporting local employment. 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 5.2: 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 heterophyllum</i>
12	Peyara	Guava	<i>Psidium guajava</i>
13	Jam	Black Berry	<i>Syzygium cumini</i>
14	Khejur	Date Palm	<i>Phonix sylvestries</i>
15	Tal	Palm	<i>Borossus flabelliformis</i>
16	Amra	Hogplum	<i>Spondias pinnata</i>
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>

SL No.	Local Name	English Name	Scientific Name
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 5.6: SOP for Tree Plantation at road side

Plant Selection	Height and Spacing	Planting and Fencing Details	Maintenance
<ul style="list-style-type: none"> • Most types of trees average height should be more than 1 meter which equals more than 3ft. at the time of planting; • As all tree heights are not same, at the time of some specific tree 	<p>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</p>	<ul style="list-style-type: none"> • Watering: needs two times in a day; Prefer especially rainy season for tree plantation if it is in other season then proper watering is needed; 	

Plant Selection		Planting and Fencing Details	Maintenance
Height and Spacing	Upazila		
<p>plantation and Contractor should communicate with Consultant Team;</p> <ul style="list-style-type: none"> Tree plantation spacing should be 3m c/c from one tree to another tree 	Upazila	<p>bamboo stakes, tied with jute rope, including the provision of necessary tools and planting materials, all in accordance with the instructions of the E-I-C. In addition, protective tree guards will be provided using high-quality Muli bamboo, measuring approximately 1200 mm in height and 500 mm in diameter. The guards will be constructed using 2 mm thick bamboo splits arranged in a grid pattern with 75 mm × 75 mm square openings, reinforced with additional bamboo splits on both sides and secured with G.I. wire. Each tree guard will be firmly supported by three Borrak bamboo posts of 1800 mm length (63 mm diameter), with at least 600 mm embedded into the ground through proper excavation and backfilling. All works, including supply, preparation, installation, and finishing, will be completed as per the direction of the E-I-C.</p>	<ul style="list-style-type: none"> Needs weed out grass and other unnecessary vegetation Need regular monitoring by 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 Kotalipara, Tungipara and Muksudpur 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 26-31, 2026. Public consultation meetings were conducted in the alongside covering of the eight (08) identified community roads. Refer to **Annexure 2** for details of the attendance of the meeting. Participants included local residents, community leaders, school authorities, representatives of religious institutions, flood shelter managers, and local government officials. During these consultations, stakeholders were informed about the objectives, scope, and expected benefits of the road improvement works, including enhanced connectivity to flood shelters, improved mobility, and disaster preparedness. Discussions focused on potential environmental and social impacts such as temporary disruption to access, noise, dust, removal of roadside vegetation, and traffic safety during construction. Stakeholders were encouraged to provide feedback on site-specific concerns and suggest measures to minimize negative impacts.

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

6.2 Methodology

Public consultation meetings were designed to ensure inclusive, transparent, and participatory engagement with local stakeholders. Site-specific consultation meetings were systematically conducted at all proposed flood shelter locations across Gopalganj 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 local

residents, community leaders, school authorities, religious institution representatives, and local government officials, bazar management committee were informed about the purpose, scope, and potential impacts of the proposed road improvements. Meetings were conducted at accessible community locations, such as schools, union parishad offices, and community centers, to maximize participation. During the sessions, project plans and environmental and social considerations were presented using simple visual aids and local language explanations to facilitate understanding. Stakeholders were encouraged to express concerns, provide suggestions, and prioritize site-specific issues, particularly regarding traffic safety, drainage, tree protection, access to flood shelters, and construction-related disturbances. The feedback collected through these consultations was systematically documented, analyzed, and incorporated into the **Environmental and Social Management Plan (ESMP)** and project design to ensure that mitigation measures are practical, locally relevant, and responsive to the needs and expectations of the affected communities.

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

Table 6.1: Consultation Meetings Summary

Sl. No.	Name of Community Road	Date DD-MM-YYYY	Venue	Main Participant Groups	No. of Participants
1.	Bandhabari-Bhai Bhai bazar road to Hasua GPS road	31.03.2026	Alongside of the proposed road.	The local individuals, elites, chairman and/or member of respective Union Parishad, farmer, businessmen, religious leaders, women, fishermen etc.	15
2.	Pinjuri School to Gopalpur Sluice gate	29.03.2026			7
3.	Kandi-Chowdhorihat Road to Pochim Dumuria Moktob via GPS road	29.03.2026			11
4.	Borua Bishna Mondir to Borua GPS Road	30.03.2026			12
5.	Radhaganj Biswas Bari Road to Bhangerhat Road	30.03.2026			12
6.	Joaria Bazar RHD Sitla Mondir- mitradanha RHD (Bridge)	26.03.2026			11
7.	Dumuria UP office-Paturtia Bazar Road	26.03.2026			12
8.	Gadar Vajondi GPS to Baksha Khola road via golger munshi house road	30.03.2026			06



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

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

During the public consultation meetings conducted in the project influence areas of the proposed community road sub-projects in Gopalganj District, local community members, representatives of local government institutions, teachers, farmers, and other stakeholders actively shared their views regarding the planned interventions under the project. Participants highlighted several key issues including poor road conditions during the rainy season, inadequate drainage facilities causing waterlogging, damaged culverts restricting natural water flow, and erosion of road embankments in certain vulnerable sections. Community members also expressed concerns about temporary disturbances during construction such as dust, noise, traffic obstruction, and safety risks for school children and pedestrians.

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

need for road safety measures such as warning signs, speed breakers near educational institutions, and improved visibility at road intersections. In addition, participants recommended minimizing construction disturbances, controlling dust and noise during construction activities, and ensuring that local access roads remain open during the implementation period. The issues and recommendations collected during these consultations have been summarized and documented in **Table 6.2**, which will guide the integration of appropriate environmental, social, and safety mitigation measures during project implementation.

Table 6.2: Issues and Recommendations raised by the Participants

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
1.	Bandhabari-Bhai Bhai bazar road to Hasua GPS road (335515189)	31/03/2026, Alongside of the proposed road.	<ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● 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.	Pinjuri School to Gopalpur Sluice gate (335514053)	29/03/2026, Alongside of the proposed road.	<ul style="list-style-type: none"> ● Dust pollution during construction may affect nearby houses, schools, and markets. ● Noise and disturbance may occur near schools, mosques, and residential areas. ● Traffic congestion and safety risks may occur during construction activities. 	<ul style="list-style-type: none"> ● Regular water spraying and proper management of construction materials to minimize dust generation. ● Restrict heavy construction activities during sensitive hours and maintain noise control measures. ● Prepare and implement a traffic management plan including warning signs, barriers, and designated detours.

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Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
			<ul style="list-style-type: none"> ● Concerns about removal of roadside trees during road widening. ● Temporary disruption to access of local houses, shops, and agricultural lands during construction. ● Need to ensure safe and quick access to flood shelters during emergencies. ● Risk of erosion and damage to road shoulders during heavy rainfall. 	<ul style="list-style-type: none"> ● Avoid unnecessary tree cutting; where unavoidable, implement compensatory plantation programs. ● 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.
3.	Kandi-Chowdhrihat Road to Pochim Dumuria Moktob via GPS road (335515199)	29/03/2026, Alongside of the proposed road.	<ul style="list-style-type: none"> ● Waterlogging occurs in some low-lying sections of the road. ● Road width is narrow in certain segments which creates difficulty for two-way traffic. ● Dust pollution during construction may affect nearby households and shops. ● Farmers depend on roadside access to transport agricultural products to local markets. ● Some households are located very close to the road alignment. ● Flood shelter accessibility is important during flood emergencies. ● Community members requested installation of safety signage. 	<ul style="list-style-type: none"> ● The road surface should be improved with proper pavement and compaction to ensure all-weather accessibility. ● Adequate roadside drainage and culverts should be constructed to facilitate smooth water flow and prevent waterlogging. ● Minor widening should be considered within the available Right of Way (ROW) to improve traffic movement and safety. ● Regular water spraying and proper construction management should be implemented to minimize dust generation. ● Traffic management measures, warning signs, and temporary safety barriers should be installed during construction.

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Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
				<ul style="list-style-type: none"> ● Construction activities should be planned to avoid blocking access to agricultural lands and transport routes.
4.	Borua Bishna Mondir to Borua GPS Road (335515144)	30/03/2026, Alongside of the proposed road.	<ul style="list-style-type: none"> ● 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 school children. ● Roadside trees provide shade and environmental benefits for the community. ● Farmers depend on roadside access to transport agricultural products to local markets. ● Some households are located very close to the road alignment. ● Improper disposal of construction waste may affect nearby agricultural land. ● Community members requested installation of safety signage. 	<ul style="list-style-type: none"> ● 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.	Radhaganj Biswas Bari Road to Bhangarhat Road (335514004)	30/03/2026, Alongside of the proposed road.	<ul style="list-style-type: none"> ● Waterlogging occurs in some low-lying sections of the road. ● Road width is narrow in certain segments which creates difficulty for two-way traffic. ● Dust pollution during construction may affect nearby households and shops. ● Farmers depend on roadside access to transport agricultural products to local markets. ● Some households are located very close to the road alignment. ● Flood shelter accessibility is important during flood emergencies. ● Community members requested installation of safety signage. 	<ul style="list-style-type: none"> ● The road surface should be improved with proper pavement and compaction to ensure all-weather accessibility. ● Adequate roadside drainage and culverts should be constructed to facilitate smooth water flow and prevent waterlogging. ● Minor widening should be considered within the available Right of Way (ROW) to improve traffic movement and safety. ● Regular water spraying and proper construction management should be implemented to minimize dust generation. ● Traffic management measures, warning signs, and temporary safety barriers should be installed during construction. ● Construction activities should be planned to avoid blocking access to agricultural lands and transport routes.
6.	Joaria Bazar RHD Sitla Mondir-mitradanha RHD (Bridge) (335914076)	26/03/2026, Alongside of the proposed road.	<ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● Adequate side drains and cross-drainage structures (culverts) should be constructed or improved to ensure proper drainage. ● Contractors should implement traffic safety measures, including warning signage, speed control, and safe pedestrian passage near schools and settlements.

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Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
			<ul style="list-style-type: none"> ● Noise from construction machinery may disturb nearby residents and institutions. ● Some roadside trees may need to be removed during road widening. ● Temporary disruption to local transportation and market access may occur during construction. 	<ul style="list-style-type: none"> ● A temporary traffic management plan should be prepared to ensure continued movement of local transport and access to markets. ● Installation of road safety signage, speed breakers, and road markings near market areas is recommended.
7.	Dumuria UP office- Paturtia Bazar Road (335913006)	26/03/2026, Alongside of the proposed road.	<ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● 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

Sl. No.	Name of community roads	Date and Site of Consultation	Issues raised and discussed	Recommendations and Comments
				maintain the road at an appropriate elevation to remain usable during floods.
8.	Gadar Vajondi GPS to Baksha Khola road via golger munshi house road (335584200)	30/03/2026, Alongside of the proposed road.	<ul style="list-style-type: none"> ● 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. ● Community members requested regular maintenance after project completion. 	<ul style="list-style-type: none"> ● 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.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the environmental and social assessment conducted for Community Roads at Gopalganj District under the RIVER Project, it can be concluded that the proposed improvement of eight (08) community roads across Kotalipara, Tungipara and Muksudpur Upazilas in Gopalganj District is environmentally and socially feasible, provided that the proposed mitigation and management measures are properly implemented. The improvement of this community roads will significantly enhance rural connectivity, improve year-round accessibility, and ensure safe and reliable access to nearby flood shelters, which is crucial during flood emergencies and other natural disasters. The project is expected to bring considerable socio-economic benefits to the local population by facilitating access to markets, schools, health facilities, and other essential services, while also supporting the transportation of agricultural products and strengthening local economic activities.

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

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

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

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

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

In conclusion, the improvement of community infrastructure connecting roads under the RIVER Project in Gopalganj 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 Kotalipara, Tungipara and Muksudpur Upazilas. It is therefore recommended that the project proceed with implementation while ensuring strict adherence to the Environmental and Social Management Plan (ESMP) and relevant regulatory and institutional requirements.

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

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

Name of Sub-Project: Bandhabari-Bhai Bhai bazar road to Hasua GPS road; ID: 335515189

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

District: Gopalganj

Upazila: Kotalipara

Union: Hasua

Name of Community/Local Area: Hasua

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 possible in order to improve riding quality and ensure all-weather accessibility. The sub-project includes the construction of L/S R.C.C. palisading measuring 25 m × 3 m from Chainage (Ch.) 0+03 m to Ch. 0+280 m, L/S R.C.C. palisading measuring 30 m × 3 m at Ch. 30 m, L/S R.C.C. palisading measuring 26 m × 3 m at Ch. 26 m, R/S R.C.C. palisading measuring 42 m × 3 m at Ch. 42 m, R/S R.C.C. palisading measuring 12 m × 3 m at Ch. 12 m, R/S R.C.C. palisading measuring 18 m × 3 m at Ch. 18 m, and R/S R.C.C. palisading measuring 14 m × 3 m at Ch. 14 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 in order to minimize potential environmental and social impacts. Appropriate road safety measures and Environmental and Social Mitigation measures have been incorporated into the project design and cost estimates to ensure the safety, sustainability, and resilience of the sub-project.

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

Important Environmental and Social Features near site:

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

Table: Detailed Chainage length of the Sub-Project

Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Pond, Residential house, Pond at a distance of 8.0m, Road Towards 26no. Hasua Govt. Primary School, Residential houses, from 280m earthen road begins.
		R	Cultivated land, Pond, cultivated land, Pond, Road beside Lavlu Kazis Shop, Land, earthen road begins.
300-600	L		Pond, electric poles, shop, cultivated land, Residential houses
		R	Residential houses, electric pole, Hasua Jame Mosque, cultivated land



Starting Point of Bandhabari-Bhai Bhai bazar road to Hasua 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 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.

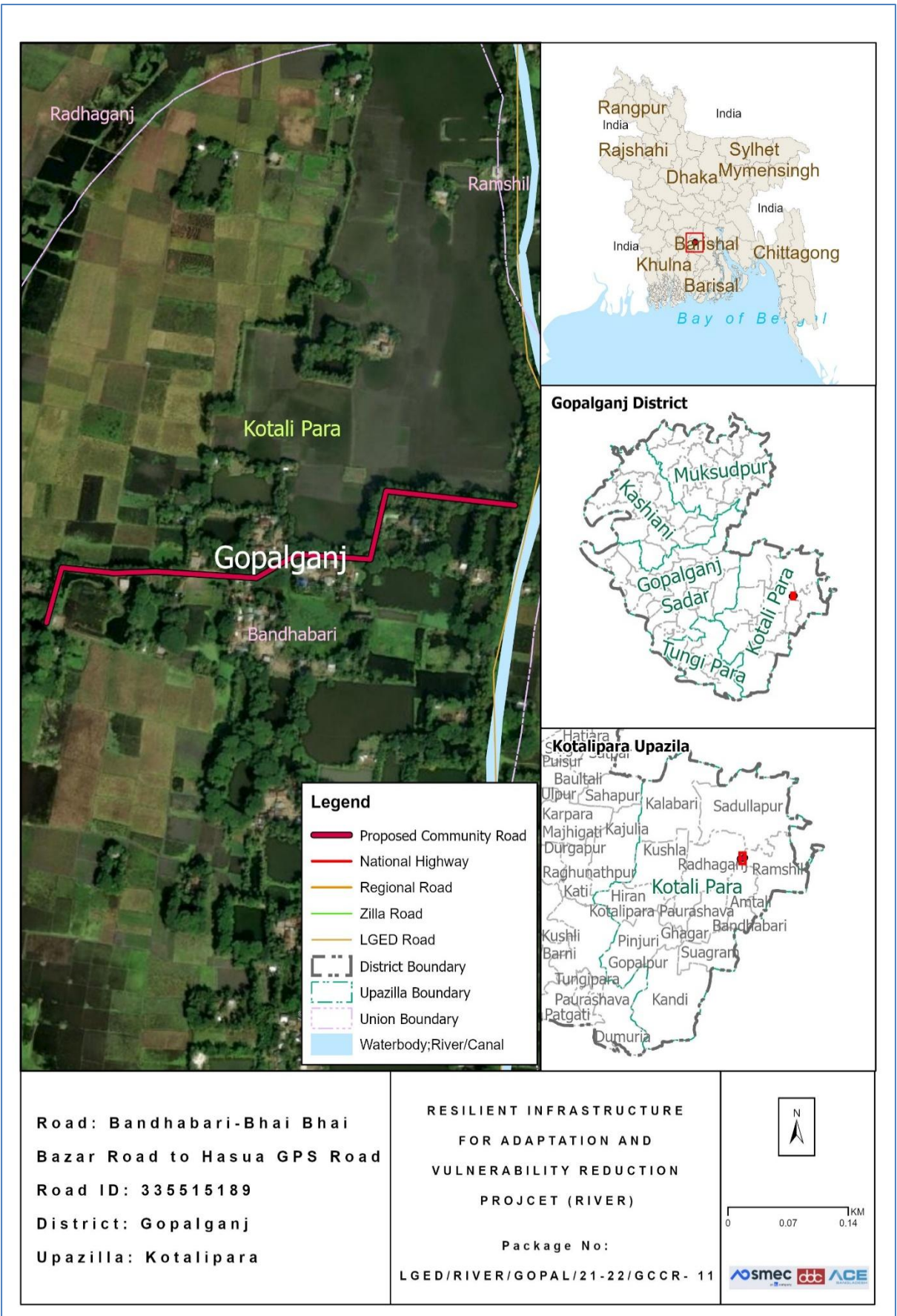
It has been clarified that the scope of this project does not extend beyond the designated area of its lodgment, and the funding entity has no intention to alter this. Additionally, it has come to attention that the evaluation of the project has also encompassed the drainage system, cross drains, and culverts, as runoff from higher ground remains a significant concern during the rainy season. The proposed sub-project area, which includes flat land and a moderately elevated village road, is not situated within any recognized environmentally sensitive zone. Therefore, no adverse impact on key environmental features is anticipated. Furthermore, the project is not expected to significantly affect the ecosystem or biodiversity. The construction of the sub-projects will not disrupt agricultural land, activities, or fish farming operations.

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 have been identified within the direct impact area of the proposed sub-project. The sub-project is situated within the Hasua and Narikel Bari villages in Hasua Union, Ward No. 1 of Kotalipara Upazila, Gopalganj District. Several environmentally and socially sensitive establishments, such as educational and religious institutions, are located within approximately 1 km of the project area. On the left side of the road alignment, the following locations are present: (0–70m) Pond, (70–198m) Residential house (North of Md. Sirajul Haque Kazi), (198–212m) Pond (8.0m away), (212–230m) Road leading to 26no. Hasua Govt. Primary School, (230–284m) Pond, (284m onwards) 26no. Hasua Govt. Primary School boundary, (230–300m) Pond, (300–345m) Residential houses, at 306m an electric pole, at 34m Eliyas's shop, at 381m an electric pole, (370–420m) Cultivated land, (420–532m) Residential houses, with Freedom Fighter Afzal Hossain's house at the end of the project site. On the right side of the alignment, the following locations are present: (0–97m) Cultivated land, (97–139m) Pond, (139–186m) Cultivated land, (186–198m) Pond, (198–212m) Road beside Lavlu Kazi's shop, (212–300m) Land, (280m onwards) Earthen road begins, (230–270m) Residential house, (270–298m) Large pond beside the road and 26no. Hasua Govt. Primary School, (300–357m) Residential houses, at 381m an electric pole, (400–420m) Hasua Jame Mosque, (420–532m) Cultivated land, with Freedom Fighter Aftab Miya's house located at the end of the road. These institutions are of significant religious, cultural, and educational importance to the local community. However, as the sub-project activities will be mainly confined to the existing road alignment, no substantial disruption or negative impact on these institutions is expected. Nevertheless, appropriate precautionary measures and environmental management practices will be implemented during the construction phase to safeguard these sensitive areas.



Location Map of the proposed Community Road

Completed environmental and social screening forms are given below:

Section A: Sub-Project Overview

Description of sub-project/component interventions:

The sub-project is classified as a village road. Based on the field survey, this sub-project involves the rehabilitation of damaged sections through Bituminous Carpeting (BC). According to the project design, the road will be upgraded with Bituminous Carpeting (BC) along the entire alignment from Chainage 0 0m to Chainage 600 m.

Sub-project Location:

Important Features	
ID	335515189
District	Gopalganj
Upazila	Kotalipara
Union	Hasua
WARD	01
Total Chainage	600m
Proposed Chainage	600m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 23.03776 N Longitude: 90.06724 E
Road Ending Point Coordinates	Latitude: 23.03651 N Longitude: 90.06399 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 Hasua and Narikel Bari villages. Some other villages named Gub Bari & Kafula Bari within one kilometer.
- ii) No historical sites were found
- iii) Not required to relocate local community.
- iv) Some trees, vegetation and livelihood will be affected.
- v) Very low chance of loss of agricultural land.
- vi) Some Household Boundary made of bamboo and tin may need adjustments.

Section B: Environmental and Social Screening

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

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

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

Several environmentally and socially sensitive establishments, including educational and religious institutions, are located within approximately 1 km of the project area. On the left side of the road alignment, the following locations are present: (0–70m) Pond, (70–198m) Residential house (North of Md. Sirajul Haque Kazi), (198–212m) Pond (8.0m away), (212–230m) Road leading to 26no. Hasua Govt. Primary School, (230–284m) Pond, (284m onwards) 26no. Hasua Govt. Primary School boundary, (230–300m) Pond, (300–345m) Residential houses, at 306m an electric pole, at 34m Eliyas’s shop, at 381m an electric pole, (370–420m) Cultivated land, (420–532m) Residential houses, with Freedom Fighter Afzal Hossain’s house at the end of the project site. On the right side of the alignment, the following locations are present: (0–97m) Cultivated land, (97–139m) Pond, (139–186m) Cultivated land, (186–198m) Pond, (198–212m) Road beside Lavlu Kazi’s shop, (212–300m) Land, (280m onwards) Earthen road begins, (230–270m) Residential house, (270–298m) Large pond beside the road and 26no. Hasua Govt. Primary School, (300–357m) Residential houses, at 381m an electric pole, (400–420m) Hasua Jame Mosque, (420–532m) Cultivated land, with Freedom Fighter Aftab Miya’s house located at the end of the road. These institutions hold important religious, cultural, and educational significance for the local community. 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 institutions 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. 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 specific to Gopalganj District is not readily available; however, the overall air quality in the district is generally good due to its rural environment, with a significant presence of vegetation and agricultural land. A minor amount of dust is generated by local transportation activities, including motorcycles, auto-rickshaws, tempos, trolleys, van-garis, and bicycles traveling on the existing road network. This dust contributes slightly to localized air pollution in the area.

Construction activities during the dry season, along with the transportation of large quantities of construction materials, may lead to an increase in dust and a rise in the concentration of vehicle-related pollutants. Such impacts may temporarily affect the local population residing and working near the project site. However, these effects are anticipated to be negative but short-term, site-specific within a confined area, and reversible or manageable through the implementation of appropriate mitigation measures.

Noise:

The baseline noise levels in Gopalganj District are generally low. Noise is primarily generated from daily activities, including the movement of local residents and vehicles. During the construction phase, noise levels may experience a temporary increase due to the operation of construction equipment and the transportation of materials. These noise impacts are expected to be brief, confined to the construction period, and localized.

Baseline soil quality:

The soil in Gopalganj District is predominantly composed of alluvial, sandy, and silty loam formations, typical of the northern floodplain region of Bangladesh. The soils here are generally formed from riverine alluvial deposits and exhibit a range of textures from sandy loam to clay loam. These soils are moderately fertile, supporting a variety of agricultural activities in the surrounding rural areas. The fertile nature of the soil makes it conducive to the cultivation of crops, contributing to the agricultural economy of the region.

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 50 to 300 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 681 μ s/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, heron/egret and Choroi (House Sparrow, *Passer domesticus*), parakeets (tia), ducks/geese (bali hash) and bulbuls (bulbuli) 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 mongoose, snake, occasional vultures 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. The catchment also supports a varied assemblage of freshwater to slightly brackish fish, including locally important species such as banded shorputi (barb), royna (local carp), bain (spiny eel), and balia, alongside typical floodplain fauna. 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 ponds and ditches are present along the route.

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: Bandhabari-Bhai Bhai bazar road to Hasua GPS road

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

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

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

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

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

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

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		<ul style="list-style-type: none"> • All kinds of Child labour are completely prohibited in every site. • Every construction materials storage site will be well fenced by Tin and safety caution tape. 		
Construction Activity	Traffic Management	<ul style="list-style-type: none"> • Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. • Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the district Executive Engineer. • Local traffic police department should be contacted, if traffic problem becomes more complex. 	Contractor	Environmental Consultant of PIU
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	<ul style="list-style-type: none"> • Water sources (e.g., ground or surface water) for construction works will be determined in consultation with the local DPHE office, considering the availability of nearby resources and technical options, and potential risks of extracting water from the same sources used by other consumer groups especially during the critical period. 	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU

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		<ul style="list-style-type: none"> • Water from any installed tubewell or an existing surface water bodies within the nearby places will be used for construction works, if the available water quality satisfies the required standards for construction works. • If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority need to be taken before extraction or setting up bore wells. • Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. • Local community must be consulted before any construction works start. 		
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> • Maintain safety measures during the movement of heavy machinery and equipment. • Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic 	Contractor	Environmental Consultant of PIU

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

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

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		<p>disposal areas and/ or at the site.</p> <ul style="list-style-type: none"> • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. • Refueling areas and other fluid transfer areas will be imperviously paved. • Workers will be trained on the correct transfer and handling of fuels and chemicals and the response to spills (incl. equipment deployment) and the site will be provided with portable spill containment and cleanup equipment. • Applicability of the Hazardous Waste Management Rules. 		
Construction Activity	Slipping of soil masses, dust deposition, draining or spillage of chemicals/contaminants, etc. to nearby water bodies	<ul style="list-style-type: none"> • Slope protection measures (proper compaction, palisading or protection walls, etc.) will be taken before starting work at any sensitive section of the road. • Dust suppression measures and material storage and handling procedure have to be undertaken with proper care and vigilance to avoid or minimize the impacts. 	Contractor	Environmental and Social Development Consultant of PIU, PSC
Construction Activity	<p>Health & Safety Risks:</p> <ul style="list-style-type: none"> • The potential for exposure to safety 	<ul style="list-style-type: none"> • 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
	<p>events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks.</p> <ul style="list-style-type: none"> • Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis. 	<ul style="list-style-type: none"> • The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. • Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. • Proper Signpost at any slippery areas will be ensured in construction site. • Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. • This sub project will have Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel 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. 		<p>Development and Gender Specialists of PIU</p>

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • 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. 		

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

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

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

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Operation & Maintenance	<p>Road Safety. Impacts include:</p> <ul style="list-style-type: none"> The increased vehicular movement and speed may trigger road safety issues like traffic accidents. The accidents may also be due to tiredness of drivers. Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries. 	<p>Road safety issues can be minimized in following ways:</p> <ul style="list-style-type: none"> By enforcing speed limits and imposing penalties on the traffic violators will ensure the road safety. Traffic signs will be provided to facilitate road users about speed limits, rest/parking areas, no-horn areas, etc. Warning messages will also be displayed at appropriate locations to aware drivers about likely accidents due to over speeding. All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time. 	UE (Upazila Engineer)	District Executive Engineer, LGED
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light. 	UE	District XEN, LGED

Cost of Environmental and Social Enhancement Works in BOQ

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

Cost of Environmental Enhancement Works in BOQ

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

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

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Sl. No.	Description of item	Quantity	Unit price	Total amount
8.	<p><u>Motivation training</u></p> <p>Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.</p>	1 no.	LS @ Tk. 10,000	10,000.00
9.	<p><u>Waste disposal facility</u></p> <p>Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.</p>	LS	@ Tk. 5000	5,000.00
10.	<p><u>Water Test (Drinking Water samples)</u></p> <p>Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.</p>	LS	@ Tk. 5000	5,000.00
11.	<p><u>Working labour shed:</u></p> <p>Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.</p>	1 no.	LS @ Tk. 30,000	30,000.00
12.	<p><u>Environmental management</u></p> <p>Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. [One person to be appointed for 8 roads]</p>	Each	@ Tk. 35000	35,000.00
Total amount for this Road				219,649.72



Existing Surroundings of the Sub-Project

Name of Sub-Project: Pinjuri School to Gopalpur Sluice gate; ID:335514053

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

District: Gopalganj

Upazila: Kotalipara

Union: Pinjuri

Name of Community/Local Area: Pinjuri

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The proposed sub-project aims to enhance an existing village road by applying Bituminous Carpeting (BC). In addition to the road improvement, the project encompasses the rehabilitation, replacement, and construction of drainage structures along the road alignment to facilitate effective floodwater drainage and ensure the uninterrupted flow of natural water. The primary objective of the sub-project is to improve the durability of the road, provide 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, followed by the application of bituminous carpeting. These activities will predominantly take place within the existing road corridor to the greatest extent possible, ensuring improved ride quality and year-round accessibility. The sub-project also includes the construction of L/S Brick Palisading measuring 96 meters by 3 meters, extending from Chainage (Ch.) 0+00 m to Ch. 0+96 m, and L/S R.C.C. Palisading measuring 27 meters by 7 meters, extending from Ch. 0+99 m to Ch. 0+126 m. The construction process will require various materials such as sand, aggregates, cement, bitumen, bricks, steel, and water. These materials will be sourced from locally approved suppliers, in compliance with the relevant environmental and procurement guidelines. The project footprint will primarily remain within the existing road alignment to minimize potential environmental and social impacts. The design and cost estimates for the sub-project include the incorporation of appropriate road safety measures and Environmental and Social Mitigation strategies to ensure the project's safety, sustainability, and long-term resilience.

Estimated footprint / land area for this sub-project is 378.00 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 00m to 126m. Detail Environmental features within 100m of the both sides from the centre line were collected @300m longitudinal intervals. The findings of the survey for the aforementioned road can be seen in the table below:

Table: Detailed Chainage length of the Sub-Project

Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-126	L		0.00m Kotalipara to Dharabashail Main Road, adjacent to Chowdhury's Hat Bazar, Fish house beside the corner, (120m) Bridge.
		R	0.00m Pinjuri GPS, 118.0m electric pole by the roadside, (0-126.0m) Boundary wall of the school.



Starting Point of Pinjuri School to Gopalpur Sluice gate

Overall Comments

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

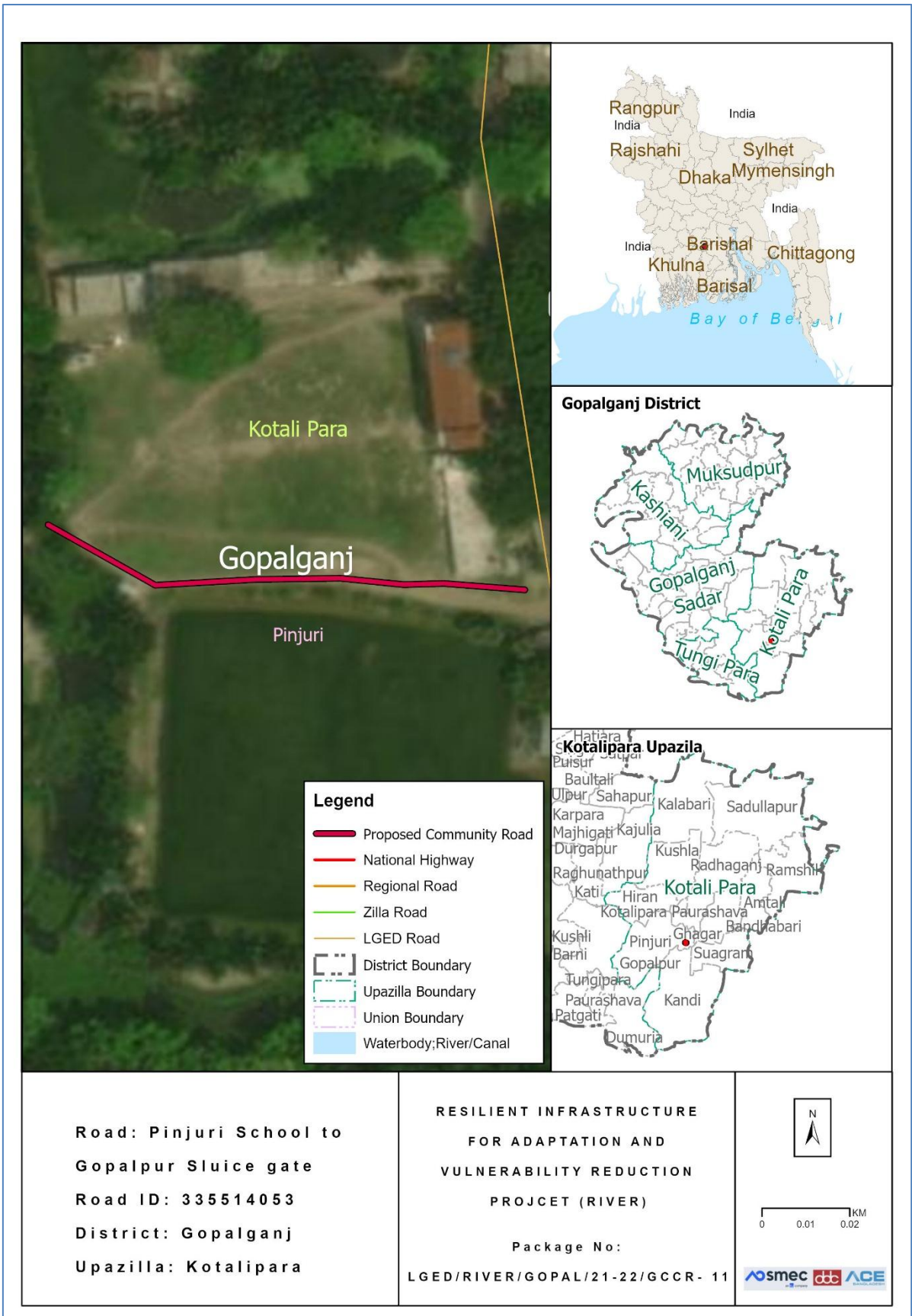
It has been confirmed that the scope of this project will not extend beyond the designated area of its lodgment, and the funding entity has no intention of altering this. Additionally, it has been noted that the evaluation of the project also includes the drainage system, cross drains, and culverts, as runoff from higher ground poses a concern during the rainy season. The proposed sub-project area, which includes flat land and a moderately elevated village road, is not located within any identified environmentally sensitive zone. Therefore, it is not anticipated to have any adverse effects on significant environmental features. No substantial impact on the local ecosystem or biodiversity is expected, and the construction of the sub-projects will not disrupt agricultural land, activities, or fish farming operations.

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 have been identified within the direct impact area of the proposed sub-project. The sub-project is located in Pinjuri, Gopalpur, Dumuria, and South Harta villages under Pinjuri Union, Ward No. 5 of Kotalipara Upazila, Gopalganj District. 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, homesteads and agricultural land are located within 200 meters, with notable landmarks including Kotalipara to Dharabashail Main Road, Chowdhury's Hat Bazar, a fish farm, a bridge, Pinjuri Central Durga Temple (250m), Chorok Worship Field (400m), and Gurahati Bridge (850m). On the right side, homesteads, agricultural land, and a pond are situated within 200 meters, with additional landmarks such as Pinjuri GPS, an electric pole (118m), a school boundary wall, the Pinjuri Union Land Office (100m), Choudhury Bazar Jame Mosque (300m), and Pinjuri Social Welfare Samiti (400m). These institutions are of significant religious, cultural, and educational value to the local community. As the sub-project will primarily occur within the existing road alignment, no major disruption to these establishments is expected. However, appropriate precautionary and environmental management measures will be implemented during construction to protect these sensitive 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 categorized as a village road. Based on the field survey, it involves the rehabilitation of damaged sections through the application of Bituminous Carpeting (BC). The project design includes the upgrading of the entire road alignment with Bituminous Carpeting (BC) from Chainage 0+00 m to Chainage 0+126 m.

Sub-project Location:

Important Features	
ID	335514053
District	Gopalganj
Upazila	Kotalipara
Union	Pinjuri
WARD	05
Total Chainage	126m
Proposed Chainage	126m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 22.95895" N Longitude: 89.99783" E
Road Ending Point Coordinates	Latitude: 22.95909" N Longitude: 89.99678" 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 Pinjuri and Gopalpur villages. Some other villages named, Dumuria and South Harta within one kilometer.
- ii) No historical sites were found
- iii) Not required to relocate local community.
- iv) Some trees, vegetation and livelihood will be affected.
- v) Very low chance of loss of agricultural land.
- vi) Some Household Boundary made of bamboo and tin may need adjustments.

Section B: Environmental and Social Screening

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

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

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

Several environmentally and socially sensitive establishments, including educational and religious institutions, are located within approximately 1 km of the project area. Along the left side of the road alignment, homesteads and agricultural land are located within 200 meters, with notable landmarks including Kotalipara to Dharabashail Main Road, Chowdhury's Hat Bazar, a fish farm, a bridge, Pinjuri Central Durga Temple (250m), Chorok Worship Field (400m), and Gurahati Bridge (850m). On the right side, homesteads, agricultural land, and a pond are situated within 200 meters, with additional landmarks such as Pinjuri GPS, an electric pole (118m), a school boundary wall, the Pinjuri Union Land Office (100m), Choudhury Bazar Jame Mosque (300m), and Pinjuri Social Welfare Samiti (400m) within approximately 1 km of the project area. These institutions hold important religious, cultural, and educational significance for the local community. 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 institutions 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. 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 specific to Gopalganj District is not readily available; however, the overall air quality in the district is generally good due to its rural environment, with a significant presence of vegetation and agricultural land. A minor amount of dust is generated by local transportation activities, including motorcycles, auto-rickshaws, tempos, trolleys, van-garis, and bicycles traveling on the existing road network. This dust contributes slightly to localized air pollution in the area.

Construction activities during the dry season, along with the transportation of large quantities of construction materials, may lead to an increase in dust and a rise in the concentration of vehicle-related pollutants. Such impacts may temporarily affect the local population residing and working near the project site. However, these effects are anticipated to be negative but

short-term, site-specific within a confined area, and reversible or manageable through the implementation of appropriate mitigation measures.

Noise:

The baseline noise levels in Gopalganj District are generally low. Noise is primarily generated from daily activities, including the movement of local residents and vehicles. During the construction phase, noise levels may experience a temporary increase due to the operation of construction equipment and the transportation of materials. These noise impacts are expected to be brief, confined to the construction period, and localized.

Baseline soil quality:

The soil in Gopalganj District is predominantly composed of alluvial, sandy, and silty loam formations, typical of the northern floodplain region of Bangladesh. The soils here are generally formed from riverine alluvial deposits and exhibit a range of textures from sandy loam to clay loam. These soils are moderately fertile, supporting a variety of agricultural activities in the surrounding rural areas. The fertile nature of the soil makes it conducive to the cultivation of crops, contributing to the agricultural economy of the region.

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 100 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 681 μ s/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, heron/egret, Choroi (House Sparrow, *Passer domesticus*), myna, and bulbul. 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 snake, monkey 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. The catchment also supports

a varied assemblage of freshwater to slightly brackish fish, including locally important species such as banded shorputi (barb), royna (local carp), bain (spiny eel), and balia, alongside typical floodplain fauna. 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 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 existing drainage system has been identified along the project alignment. However, several natural drainage features, including ponds, ditches and sluice, are present along the route.

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)

<p>There is no possibility of stagnant water bodies remained for encouraging mosquito breeding and other disease vectors, during the operation phase.</p>
<p>Likely direct and indirect impacts on economic development in the project areas by the sub-project:</p> <p>Construction or implementation of a road project substantially contributes to the development of the project areas. It surely improves the communication network, reduces the transport time, increases the trade and business in/around the areas, and ensures access to better living conditions with amenities, better educational and job opportunities and health facilities. Thus, the direct and indirect impacts on economic development in the project areas would be enormous by this sub-project.</p>
<p>Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)</p> <p>No existing drainage channels or surface water bodies found in the project area, therefore, no such effect can be anticipated.</p>
<p>Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)</p> <p>There are no protected areas in or around project sites, and no known areas of ecological interest.</p>
<p>Activities leading to landslides, slumps, slips and other mass movements in road cuts:</p> <p>The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.</p>
<p>Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)</p> <p>No</p>
<p>Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:</p> <p>Improved road communication will definitely increase the traffic/ vehicular movement, which must increase the light and noise pollution, but air pollution effect will not be increased significantly, as the proposed BC road will reduce the pollution generated from dust on the muddy road, especially during the dry season and if the vehicles are maintained in good conditions.</p>

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

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

ESMP for Proposed Community Road: Pinjuri School to Gopalpur Sluice gate

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

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

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

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

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

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

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

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		<p>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.</p> <ul style="list-style-type: none"> • If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority need to be taken before extraction or setting up bore wells. • Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. • Local community must be consulted before any construction works start. 		
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> • Maintain safety measures during the movement of heavy machinery and equipment. • Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness. 	Contractor	Environmental Consultant of PIU
Construction	Labor Base Camp:	<ul style="list-style-type: none"> • Awareness building session will be undertaken 	Contractor	Social

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Activity	Conflicts with the local residents	<p>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.</p> <ul style="list-style-type: none"> • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation. 		Development Specialist and Gender Specialist of PIU
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> • A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance 		

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

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

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

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area.</p> <ul style="list-style-type: none"> • 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 		

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		that the correct methods are being used.		
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> • Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • 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.

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

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

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	<p>accidents. The accidents may also be due to tiredness of drivers.</p> <ul style="list-style-type: none"> Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries. 	<p>at appropriate locations to aware drivers about likely accidents due to over speeding.</p> <ul style="list-style-type: none"> All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time. 		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light. 	UE	District XEN, LGED

Cost of Environmental and Social Enhancement Works in BOQ

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

Cost of Environmental Enhancement Works in BOQ

Sl. No.	Description of item	Quantity	Unit price	Total amount
1.	<p><u>Grass Turfing</u></p> <p>Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)</p>	151.2 Sq.m	@38.15 Tk. Per sqm	5,768.28
2.	<p><u>Dust suppression measures</u></p> <p>Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C</p>	126.0m	@ 2.56 BDT	322.56
3.	<p><u>Water Supply and Sanitation</u></p> <p>Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge.</p> <p>Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.</p>	2 nos.	@12822.86 per toilet	25,645.72

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Sl. No.	Description of item	Quantity	Unit price	Total amount
4.	<p><u>First Aid Box</u></p> <p>Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.</p>	1 no.	LS @5000 Tk. Per box	5,000.00
5.	<p><u>Drinking Water Facilities</u></p> <p>Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.</p>	1 no.	LS @ Tk. 30,000	30,000.00

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Sl. No.	Description of item	Quantity	Unit price	Total amount
6.	<p><u>Traffic Management</u></p> <p>Maintaining traffic management at worksite from time of commencement of contractor’s activities to time of completion activities, including ensuring that the road is safe for users, providing a safe working area for those involved in work on trafficked network and minimizing any disruption to smooth flow of traffic (this includes providing necessary barricades, warning signs/lights, guide signs, flagmen, maintaining diversion roads by cutting, filling, constructing, etc. or by any other means) in accordance with the full satisfaction of the Engineering-in-charge.</p>	1 no.	LS @ Tk. 15,000	15,000.00
7.	<p><u>Personal Protection Equipment for Workers</u></p> <p>Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles</p>	LS	LS @ Tk 30,000	30,000.00
8.	<p><u>Motivation training</u></p> <p>Motivation training (twice: before and after construction start) of the Upazila Engineer ‘sand Contractor’s representatives on safety practice and as per direction of the E.I.C.</p>	1 no.	LS @ Tk. 10,000	10,000.00

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Sl. No.	Description of item	Quantity	Unit price	Total amount
9.	<p><u>Waste disposal facility</u></p> <p>Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.</p>	LS	@ Tk. 5000	5,000.00
10.	<p><u>Water Test (Drinking Water samples)</u></p> <p>Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.</p>	LS	@ Tk. 5000	5,000.00
11.	<p><u>Working labour shed:</u></p> <p>Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.</p>	1 no.	LS @ Tk. 30,000	30,000.00
12.	<p><u>Environmental management</u></p> <p>Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. <u>[One person to be appointed for 8 roads]</u></p>	Each	@ Tk. 35000	35,000.00
Total amount for this Road				196,736.56



Existing Surroundings of the Sub-Project

**Name of Sub-Project: Kandi-Chowdhorihat Road to Pochim Dumuria Moktob via GPS road;
ID: 335515199**

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

District: Gopalganj

Upazila: Kotalipara

Union: Suagram

Name of Community/Local Area: Poschim Dumuria

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). It also includes the rehabilitation, replacement, and construction of drainage structures along the road alignment to facilitate proper drainage of floodwater and maintain natural water flow. The main objective of the sub-project is to enhance the road's durability, ensure safe and reliable transportation, and improve connectivity for the surrounding rural communities. The road improvement works will consist of site preparation, earthworks, subgrade and base preparation, followed by the application of bituminous carpeting. These activities will predominantly take place within the existing road corridor to the greatest extent possible, in order to enhance riding quality and ensure all-weather accessibility. The sub-project also includes the construction of various sections of R.C.C. and L/S Palisading along the road, including 30 m × 3 m from Chainage (Ch.) 0+00 m to Ch. 0+30 m, 21 m × 3 m from Ch. 0+29 m to Ch. 0+50 m, 49 m × 3 m from Ch. 0+147 m to Ch. 0+196 m, 45 m × 3 m from Ch. 0+250 m to Ch. 0+295 m, 43 m × 3 m from Ch. 0+303 m to Ch. 0+346 m, 20 m × 3 m from Ch. 0+597 m to Ch. 0+617 m, 115 m × 3 m from Ch. 0+650 m to Ch. 0+765 m, 29 m × 3 m from Ch. 0+702 m to Ch. 0+731 m, 8 m × 3 m from Ch. 0+790 m to Ch. 0+798 m, and 20 m × 3 m from Ch. 0+830 m to Ch. 0+850 m. The construction will require materials such as sand, aggregates, cement, bitumen, bricks, steel, and water, which will be procured from local suppliers in compliance with environmental and procurement guidelines. The project's footprint will remain largely within the existing road alignment to minimize potential environmental and social impacts. Appropriate road safety and Environmental and Social Mitigation measures have been integrated 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 2,550 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 00m to 850m. Detail Environmental features within 100m of the both sides from the centre line were collected @300m longitudinal intervals. The findings of the survey for the aforementioned road can be seen in the table below:

Table: Detailed Chainage length of the Sub-Project

Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		(0–30) – Low-lying water body (ditch), (30–100) → Cultivated land, (100–196) – Pond, (196–250) – Residential houses.
		R	(0–29) – Residential houses, (29–50) – Pond, (50–300) Residential houses.
300-600	L		(300–346) – Pond, (346–378) – Paddy field, (378–600) – Cultivated land with 2 houses in between.
		R	(300–378) – Residential houses, (378–600) – Cultivated land and residential houses.
600-850	L		(600–635) – Residential houses, (635–735) – Residential houses and at 685m – Mosque, (685–850) – Residential houses.
		R	(600–621) – Pond, (621–635) – Building house, At 650 m – Electric pole, (650–685) – Cultivated land, (615–850) – Cultivated land.



Starting Point of Kandi-Chowdhori Road to Pochim Dumuria Moktob via 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 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 confirmed that the scope of this project will not extend beyond the designated area of its lodgment, and the funding entity has no intention of altering this. Additionally, it has been noted that the evaluation of the project has incorporated the drainage system, cross drains, and culverts, as runoff from higher ground is a concern during the rainy season. The proposed sub-project area, which includes flat land and a moderately elevated village road, is not located within any recognized environmentally sensitive zones. Therefore, no adverse impacts on key environmental features are expected. The construction of the sub-projects is not anticipated to have significant effects on the local ecosystem or biodiversity, and agricultural land, activities, or fish farming will not be disrupted.

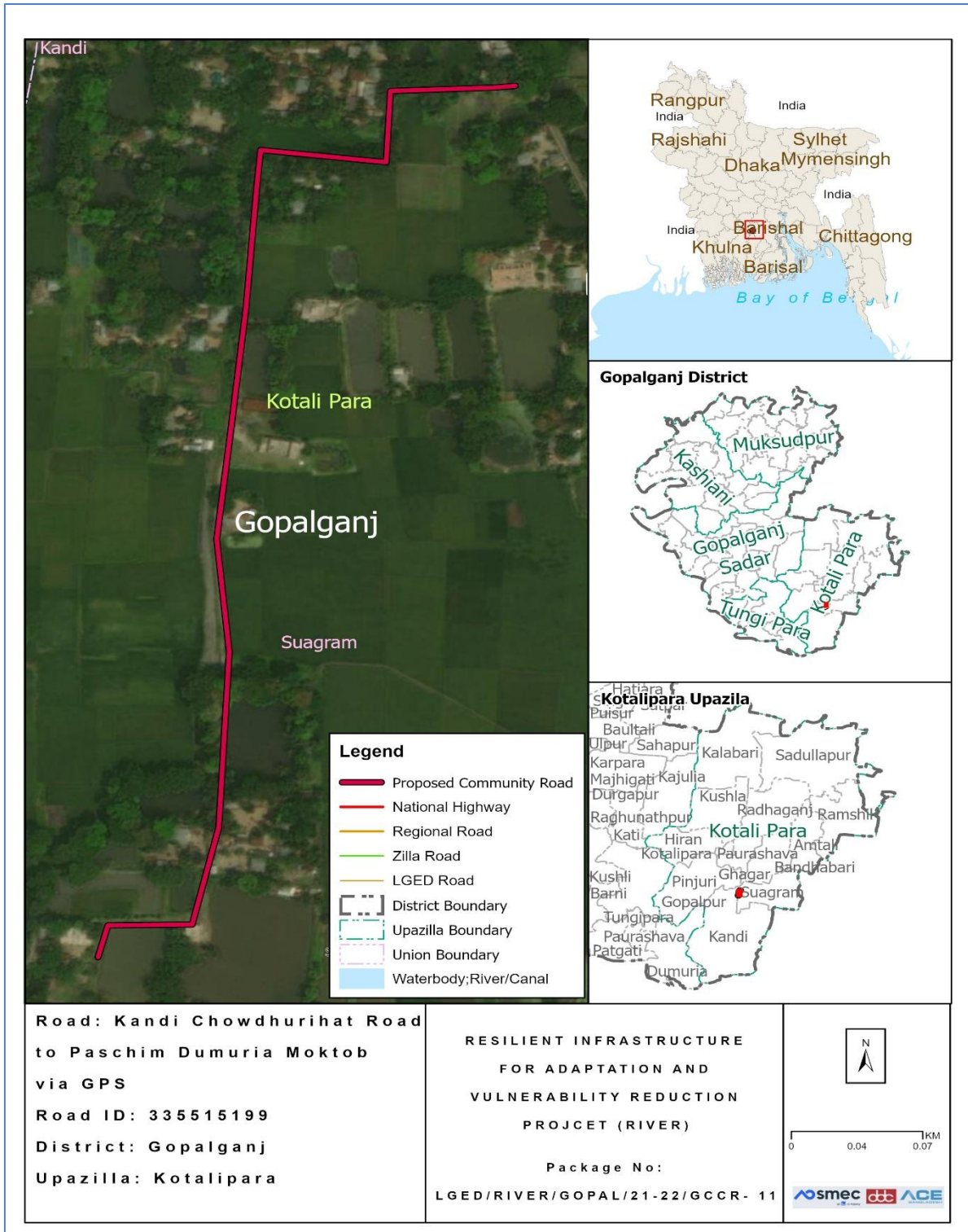
Types of waste to be generated during construction and operation phase:

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 have been identified within the direct impact area of the proposed sub-project. The sub-project is located in Poshchim Dumuria and Kandi Chowdhurihat villages within Poshchim Dumuria Union, Ward No. 8 of Kotalipara Upazila, Gopalganj District. Several environmentally and socially sensitive establishments, including educational and religious institutions, are situated within approximately 1 km of the project area. Along the left side of the road alignment, the following features are present: a low-lying water body (ditch) at 0–30m, cultivated land between 30–100m, a pond between 100–196m, Dumuria Bazar at 250m, residential houses between 196–250m, a pond between 300–346m, Pinjuri Union High School Zone at 350m, paddy fields between 346–378m, cultivated land with two houses between 378–600m, residential houses between 600–635m, residential houses between 635–735m, and the Purbo Pinjuri Talukder Para Jame Mosque at 685m. The remaining stretch from 685–850m includes residential houses, with additional features such as a pond between 600–621m, a building house between 621–635m, and an electric pole at 650m, followed by cultivated land between 650–685m and continuing cultivated land from 615–850m. Along the right side of the alignment, the following features are present: residential houses between 0–29m, a pond between 29–50m, residential houses between 50–300m, residential houses between 300–378m, and cultivated land with residential houses

between 378–600m, all situated within approximately 1 km of the project area. These establishments hold significant religious, cultural, and educational value to the local community. As the proposed sub-project activities will largely be carried out within the existing road alignment, no substantial disturbance or negative impact on these nearby institutions is expected. However, appropriate precautionary measures and environmental management strategies will be implemented during the construction phase to ensure the protection of these sensitive 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 the entire alignment from Chainage 0 0m to Chainage 850 m.

Sub-project Location:

Important Features	
ID	335515199
District	Gopalganj
Upazila	Kotalipara
Union	Suagram
WARD	08
Total Chainage	850m
Proposed Chainage	850m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 22.95119'' N Longitude: 90.00516'' E
Road Ending Point Coordinates	Latitude: 22.94652'' N Longitude: 90.00207'' 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 Poshchim Dumuria and Kandi Chowdhurihat villages. Some other villages named Purbo Pinjuri, Kashatoli, Sonatia, East Vennabari within one kilometer.
- ii) No historical sites were found
- iii) Not required to relocate local community.
- iv) Some trees, vegetation and livelihood will be affected.
- v) Very low chance of loss of agricultural land.
- vi) Some Household Boundary made of bamboo and tin may need adjustments.

Section B: Environmental and Social Screening

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

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

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

Several environmentally and socially sensitive establishments, including educational and religious institutions, are located within approximately 1 km of the project area. Along the left side of the road alignment, the following features are present: a low-lying water body (ditch) at 0–30m, cultivated land between 30–100m, a pond between 100–196m, Dumuria Bazar at 250m, residential houses between 196–250m, a pond between 300–346m, Pinjuri Union High School Zone at 350m, paddy fields between 346–378m, cultivated land with two houses between 378–600m, residential houses between 600–635m, residential houses between 635–735m, and the Purbo Pinjuri Talukder Para Jame Mosque at 685m. The remaining stretch from 685–850m includes residential houses, with additional features such as a pond between 600–621m, a building house between 621–635m, and an electric pole at 650m, followed by cultivated land between 650–685m and continuing cultivated land from 615–850m. Along the right side of the alignment, the following features are present: residential houses between 0–29m, a pond between 29–50m, residential houses between 50–300m, residential houses between 300–378m, and cultivated land with residential houses between 378–600m, all situated within approximately 1 km of the project area. These institutions hold important religious, cultural, and educational significance for the local community. 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 institutions 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. 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 specific to Gopalganj District is not readily available; however, the overall air quality in the district is generally good due to its rural environment, with a significant presence of vegetation and agricultural land. A minor amount of dust is generated by local transportation activities, including motorcycles, auto-rickshaws, tempos, trolleys,

van-garis, and bicycles traveling on the existing road network. This dust contributes slightly to localized air pollution in the area.

Construction activities during the dry season, along with the transportation of large quantities of construction materials, may lead to an increase in dust and a rise in the concentration of vehicle-related pollutants. Such impacts may temporarily affect the local population residing and working near the project site. However, these effects are anticipated to be negative but short-term, site-specific within a confined area, and reversible or manageable through the implementation of appropriate mitigation measures.

Noise:

The baseline noise levels in Gopalganj District are generally low. Noise is primarily generated from daily activities, including the movement of local residents and vehicles. During the construction phase, noise levels may experience a temporary increase due to the operation of construction equipment and the transportation of materials. These noise impacts are expected to be brief, confined to the construction period, and localized.

Baseline soil quality:

The soil in Gopalganj District is predominantly composed of alluvial, sandy, and silty loam formations, typical of the northern floodplain region of Bangladesh. The soils here are generally formed from riverine alluvial deposits and exhibit a range of textures from sandy loam to clay loam. These soils are moderately fertile, supporting a variety of agricultural activities in the surrounding rural areas. The fertile nature of the soil makes it conducive to the cultivation of crops, contributing to the agricultural economy of the region.

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 50 to 200 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 681 μ s/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, heron/egret, crow, common myna 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 occasional vultures, 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. The catchment also supports a varied assemblage of freshwater to slightly brackish fish, including locally important species such as rohu, catla, snakehead murrel, common carp, shrimp, banded shorputi (barb), royna (local carp), bain (spiny eel), and balia, alongside typical floodplain fauna. 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 ponds & ditches are located at distances of approximately 200m 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 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

<p>Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)</p> <p>No.</p>
<p>Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)</p> <p>There is no possibility of stagnant water bodies remained for encouraging mosquito breeding and other disease vectors, during the operation phase.</p>
<p>Likely direct and indirect impacts on economic development in the project areas by the sub-project:</p> <p>Construction or implementation of a road project substantially contributes to the development of the project areas. It surely improves the communication network, reduces the transport time, increases the trade and business in/around the areas, and ensures access to better living conditions with amenities, better educational and job opportunities and health facilities. Thus, the direct and indirect impacts on economic development in the project areas would be enormous by this sub-project.</p>
<p>Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)</p> <p>No existing drainage channels or surface water bodies found in the project area, therefore, no such effect can be anticipated.</p>
<p>Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)</p> <p>There are no protected areas in or around project sites, and no known areas of ecological interest.</p>
<p>Activities leading to landslides, slumps, slips and other mass movements in road cuts:</p> <p>The entire sub-project component area is nearly flat, thus no such type of impacts is anticipated.</p>
<p>Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)</p> <p>No</p>
<p>Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:</p> <p>Improved road communication will definitely increase the traffic/ vehicular movement, which must increase the light and noise pollution, but air pollution effect will not be increased significantly, as the proposed BC road will reduce the pollution generated from dust on the muddy road, especially during the dry season and if the vehicles are maintained in good conditions.</p>

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

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

ESMP for Proposed Community Road: Kandi-Chowdhorihat Road to Pochim Dumuria Moktob via GPS road

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

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

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

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

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

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

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

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

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

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Activity	Conflicts with the local residents	<p>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.</p> <ul style="list-style-type: none"> • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation. 		Specialist and Gender Specialist of PIU
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> • A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance 		

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

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

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

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area.</p> <ul style="list-style-type: none"> • 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 		

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		that the correct methods are being used.		
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> • Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • 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.

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

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

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>accidents. The accidents may also be due to tiredness of drivers.</p> <ul style="list-style-type: none"> Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries. 	<p>at appropriate locations to aware drivers about likely accidents due to over speeding.</p> <ul style="list-style-type: none"> All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time. 		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light. 	UE	District XEN, LGED

Cost of Environmental and Social Enhancement Works in BOQ

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

Cost of Environmental Enhancement Works in BOQ

Sl. No.	Description of item	Quantity	Unit price	Total amount
1.	<p><u>Grass Turfing</u></p> <p>Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)</p>	1,020 Sq.m	@38.15 Tk. Per sqm	38,913.00
2.	<p><u>Dust suppression measures</u></p> <p>Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C</p>	850.0m	@ 2.56 BDT	2,176.00
3.	<p><u>Water Supply and Sanitation</u></p> <p>Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge.</p> <p>Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.</p>	2 nos.	@12822.86 per toilet	25,645.72

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Sl. No.	Description of item	Quantity	Unit price	Total amount
4.	<p><u>First Aid Box</u></p> <p>Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.</p>	1 no.	LS @5000 Tk. Per box	5,000.00
5.	<p><u>Drinking Water Facilities</u></p> <p>Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.</p>	1 no.	LS @ Tk. 30,000	30,000.00
6.	<p><u>Traffic Management</u></p> <p>Maintaining traffic management at worksite from time of commencement of contractor's activities to time of completion activities, including ensuring that the road is safe for users, providing a safe working area for those involved in work on trafficked network and minimizing any disruption to smooth flow of traffic (this includes providing necessary barricades, warning signs/lights,</p>	1 no.	LS @ Tk. 15,000	15,000.00

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Sl. No.	Description of item	Quantity	Unit price	Total amount
	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.			
7.	<p><u>Personal Protection Equipment for Workers</u></p> <p>Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles</p>	LS	LS @ Tk 30,000	30,000.00
8.	<p><u>Motivation training</u></p> <p>Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.</p>	1 no.	LS @ Tk. 10,000	10,000.00
9.	<p><u>Waste disposal facility</u></p> <p>Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.</p>	LS	@ Tk. 5000	5,000.00

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Sl. No.	Description of item	Quantity	Unit price	Total amount
10.	<p><u>Water Test (Drinking Water samples)</u></p> <p>Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.</p>	LS	@ Tk. 5000	5,000.00
11.	<p><u>Working labour shed:</u></p> <p>Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.</p>	1 no.	LS @ Tk. 30,000	30,000.00
12.	<p><u>Environmental management</u></p> <p>Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. <u>[One person to be appointed for 8 roads]</u></p>	Each	@ Tk. 35000	35,000.00
Total amount for this Road				231,734.72



Existing Surroundings of the Sub-Project

Name of Sub-Project: Borua Bishna Mondir to Borua GPS Road; ID: 335515144

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

District: Gopalganj

Upazila: Kotalipara

Union: Kolabari-(1)

Name of Community/Local Area: Burua

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 possible in order to improve riding quality and ensure all-weather accessibility. The sub-project includes the construction of R.C.C. Palisading L/S measuring 7.0 m × 2.5 m at Chainage (Ch.) 7 m, R/S measuring 13 m × 5 m at Ch. 13 m, and Brick Palisading measuring 34 m × 4 m at Ch. 360 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 in order to minimize potential environmental and social impacts. Appropriate road safety measures and Environmental and Social Mitigation measures have been incorporated into the project design and cost estimates to ensure the safety, sustainability, and resilience of the sub-project.

Estimated footprint / land area for this sub-project is 1,146 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 00m to 382m. Detail Environmental features within 100m of the both sides from the centre line were collected @300m longitudinal intervals. The findings of the survey for the aforementioned road can be seen in the table below:

Table: Detailed Chainage length of the Sub-Project

Chainage	Orientation (Left/Right)	Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L	Residential houses, (49.0–133.0 m) cultivated land, (133–204) residential houses, (204–248) land, (248–300) residential houses

		R	canal width 25.0m and land, (204–248) land, (248–300) canal at 25.0 m, residential houses
300-600	L		residential houses, (360–382 m) school perimeter and towards north at 40.0 m distance Buruya Temple, and No. 98 Govt. Primary School
		R	Residential houses from canal (25.0 m width), (360–382 m) school perimeter



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

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

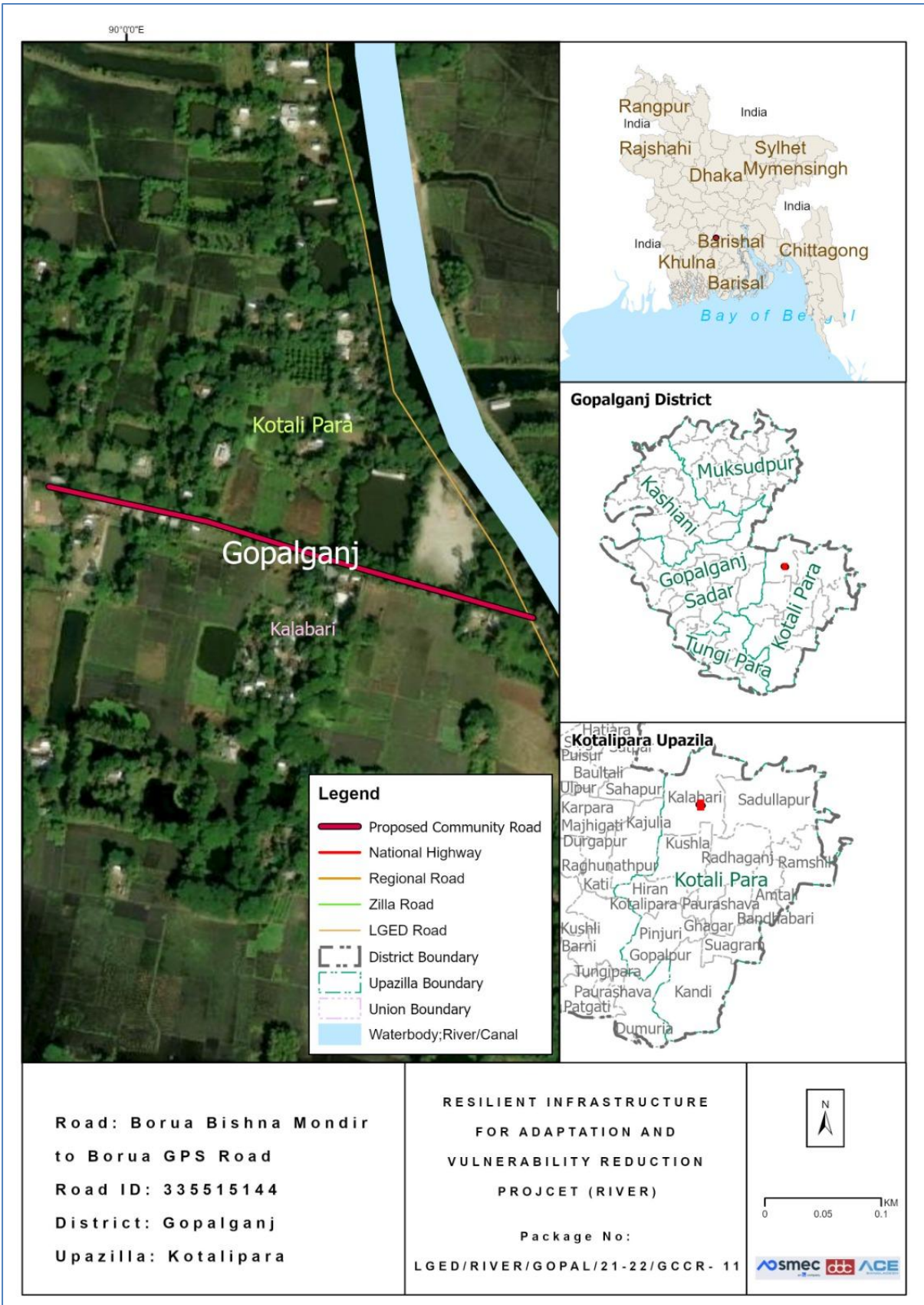
included into the evaluation of this project since runoff from higher grounds are also a concerning matter during rainy season. The proposed Sub-project area for the construction included flat areas and moderate hillock village road is not located within any identified environmentally sensitive area,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

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

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

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

No historical or archaeological sites were identified within the direct influence area of the proposed sub-project. The sub-project is located within Kolabari, Borua, Kaful Bari, Nalua villages under Borua Union, Ward No. 6 of Kotalipara Upazila in Gopalganj District. 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, the following features are located: at 0.00 m, the road runs from Kadambari to Gandiasur via Kaligonj and Buruya Village. From 0–49 m, there are residential houses; from 49–133 m, cultivated land; from 133–204 m, residential houses; from 204–248 m, land; from 248–300 m, residential houses and Momtaz's House; from 300–360 m, residential houses; and from 360–382 m, the school perimeter, with Buruya Temple located 40 m north and No. 98 Government Primary School within approximately 1 km of the project area. On the right side of the alignment, the following features are found: from 0–204 m, a canal with a width of 25 m and land; from 204–248 m, land; from 248–300 m, a canal located 25 m from residential houses; from 300–360 m, residential houses situated 25 m from the canal; and from 360–382 m, the school perimeter. These institutions have significant religious, cultural, and educational importance for the local community. As the sub-project activities will primarily take place within the existing road alignment, no significant disruption or negative impact on these institutions is expected. However, appropriate precautionary and environmental management measures will be implemented during the construction phase to ensure the protection of these sensitive 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 the entire alignment from Chainage 0 0m to Chainage 382m.

Sub-project Location:

Important Features	
ID	335515144
District	Gopalganj
Upazila	Kotalipara
Union	Kolabari(1)
WARD	06
Total Chainage	382m
Proposed Chainage	382m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 23.08066" N Longitude: 90.00307" E
Road Ending Point Coordinates	Latitude: 23.08161" N Longitude: 89.99943" 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 Borua, Kaful Bari, Nalua villages Some other villages named Kadambari, Kaliganj within one kilometer.
- ii) No historical sites were found
- iii) Not required to relocate local community.
- iv) Some trees, vegetation and livelihood will be affected.
- v) Very low chance of loss of agricultural land.
- vi) Some Household Boundary made of bamboo and tin may need adjustments.

Section B: Environmental and Social Screening

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

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

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

Several environmentally and socially sensitive establishments, including educational and religious institutions, are located within approximately 1 km of the project area. . Along the left side of the road alignment, the following features are located: at 0.00 m, the road runs from Kadambari to Gandiasur via Kaligonj and Buruya Village. From 0–49 m, there are residential houses; from 49–133 m, cultivated land; from 133–204 m, residential houses; from 204–248 m, land; from 248–300 m, residential houses and Momtaz's House; from 300–360 m, residential houses; and from 360–382 m, the school perimeter, with Buruya Temple located 40 m north and No. 98 Government Primary School within approximately 1 km of the project area. On the right side of the alignment, the following features are found: from 0–204 m, a canal with a width of 25 m and land; from 204–248 m, land; from 248–300 m, a canal located 25 m from residential houses; from 300–360 m, residential houses situated 25 m from the canal; and from 360–382 m, the school perimeter. These institutions hold important religious, cultural, and educational significance for the local community. 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 institutions 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. 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 specific to Gopalganj District is not readily available; however, the overall air quality in the district is generally good due to its rural environment, with a significant presence of vegetation and agricultural land. A minor amount of dust is generated by local transportation activities, including motorcycles, auto-rickshaws, tempos, trolleys, van-garis, and bicycles traveling on the existing road network. This dust contributes slightly to localized air pollution in the area.

Construction activities during the dry season, along with the transportation of large quantities of construction materials, may lead to an increase in dust and a rise in the concentration of vehicle-related pollutants. Such impacts may temporarily affect the local population residing and working near the project site. However, these effects are anticipated to be negative but short-term, site-specific within a confined area, and reversible or manageable through the implementation of appropriate mitigation measures.

Noise:

The baseline noise levels in Gopalganj District are generally low. Noise is primarily generated from daily activities, including the movement of local residents and vehicles. During the construction phase, noise levels may experience a temporary increase due to the operation of construction equipment and the transportation of materials. These noise impacts are expected to be brief, confined to the construction period, and localized.

Baseline soil quality:

The soil in Gopalganj District is predominantly composed of alluvial, sandy, and silty loam formations, typical of the northern floodplain region of Bangladesh. The soils here are generally formed from riverine alluvial deposits and exhibit a range of textures from sandy loam to clay loam. These soils are moderately fertile, supporting a variety of agricultural activities in the surrounding rural areas. The fertile nature of the soil makes it conducive to the cultivation of crops, contributing to the agricultural economy of the region.

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 150 to 450 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, heron/egret, crow, common myna and Choroi (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 occasional vultures, 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. The catchment also supports a varied assemblage of freshwater to slightly brackish fish, including locally important species such as rohu, catla, snakehead murrel, common carp, shrimp, banded shorputi (barb), royna (local carp), bain (spiny eel), and balia, alongside typical floodplain fauna. 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)

<p>The possibility is Medium, for stagnant water bodies to occur. Because water usage will be higher during the construction period. By default, this area has no water logging troubles due to being natural channels. Moreover, no possibilities of stagnation of water in long run. So, local communities have stated that they do not have severe troubles with mosquitos or other disease vectors.</p>
<p>Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)</p> <p>No existing drainage system has been identified along the project alignment. However, several natural drainage features, including ponds, ditches, Canals are present at distances within 150 to 360 m from the alignment.</p>
<p>Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)</p> <p>Low. Under the improvement of this intervention, the effect of destruction or damage of lives, endangered species or ecosystem is very low. In the site area not observed such occurrence of lives that's life cycle and or movement areas disturbed (i.e. Insects - Ant, bees, earthworm, reptiles, birds etc.).</p>
<p>Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:</p> <p>Scope of work leading to low scale effects of landslide. The impacts are negative but short-term and site-specific. It can be managed through mitigation measures.</p>
<p>Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description)</p> <p>Low, Potential erosion may occur when moderately to highly sloping terrains are disturbed for the improvement of sub-project. The impacts are negative but short term, site specific within a relatively small area and adjustable by mitigation measures.</p>
<p>Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:</p> <p>No traffic movement impacts on light but low effects of noise and air pollution.</p>

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

B.4: Operation Phase

<p>Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:</p> <p>No</p>
<p>Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)</p> <p>No</p>

<p>Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)</p> <p>No.</p>
<p>Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)</p> <p>There is no possibility of stagnant water bodies remained for encouraging mosquito breeding and other disease vectors, during the operation phase.</p>
<p>Likely direct and indirect impacts on economic development in the project areas by the sub-project:</p> <p>Construction or implementation of a road project substantially contributes to the development of the project areas. It surely improves the communication network, reduces the transport time, increases the trade and business in/around the areas, and ensures access to better living conditions with amenities, better educational and job opportunities and health facilities. Thus, the direct and indirect impacts on economic development in the project areas would be enormous by this sub-project.</p>
<p>Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)</p> <p>No existing drainage channels or surface water bodies found in the project area, therefore, no such effect can be anticipated.</p>
<p>Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)</p> <p>There are no protected areas in or around project sites, and no known areas of ecological interest.</p>
<p>Activities leading to landslides, slumps, slips and other mass movements in road cuts:</p> <p>The entire sub-project component area is nearly flat, thus no such type of impacts is anticipated.</p>
<p>Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)</p> <p>No</p>
<p>Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:</p> <p>Improved road communication will definitely increase the traffic/ vehicular movement, which must increase the light and noise pollution, but air pollution effect will not be increased significantly, as the proposed BC road will reduce the pollution generated from dust on the muddy road, especially during the dry season and if the vehicles are maintained in good conditions.</p>

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

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

ESMP for Proposed Community Road: Borua Bishna Mondir to Borua GPS Road

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

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		<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. • In case of unavoidable circumstances, alternative access will be provided. 	PIU	Social Development Specialist and Gender Specialist of PIU
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and pedestrians, potential accidents to workers/local people, generating dust and noise)	<ul style="list-style-type: none"> • Transportation of construction materials to the site will be carried out by covering the materials as a whole. • Store the materials in designated places, with proper fencing and coverings. 	Contractor	Environmental Consultant of PIU
Pre-Construction Stage	Sanitation and water supply	<ul style="list-style-type: none"> • Sanitation facilities (male and female toilets, wash-basins, etc.) for workers and constructor's officials/employees will be provided. • Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through 	Contractor	Environmental Consultant of PIU

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

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

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

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

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

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		<p>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.</p> <ul style="list-style-type: none"> • If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority need to be taken before extraction or setting up bore wells. • Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. • Local community must be consulted before any construction works start. 		
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> • Maintain safety measures during the movement of heavy machinery and equipment. • Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness. 	Contractor	Environmental Consultant of PIU
Construction	Labor Base Camp:	<ul style="list-style-type: none"> • Awareness building session will be undertaken about 	Contractor	Social

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Activity	Conflicts with the local residents	<p>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.</p> <ul style="list-style-type: none"> • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation. 		Development Specialist and Gender Specialist of PIU
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> • A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance 		

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

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

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

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		<p>Emergency evacuation response plan will exist in sub-project area.</p> <ul style="list-style-type: none"> • 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. 		

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> • Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface runoff. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • 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. 	Contractor	Environmental Consultant of PIU/D&SC.

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

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	<p>Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance after the construction). The impacts are similar to those listed in construction stage:</p> <ul style="list-style-type: none"> • Pollution from waste materials. • Health & Safety risks to workers and local community. 	<ul style="list-style-type: none"> • Provision to proper measures of mitigation and monitoring to minimize or reduce the environmental and social impacts during demobilization, which are anticipated to be similar to those identified for the construction phase. Some of the measures include: (i)remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; (ii) ensure that all affected structures rehabilitated/compensated; (iii) the area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. Disposal of faecal sludge from latrines is to be undertaken properly, if management on site becomes problematic; (iv) all imported materials are to be removed and the area shall be re-vegetated/re-grassed as per specification that forms part of this document. • The contractor must arrange the cancellation of all temporary services. 	Contractor	Environmental Consultant of PIU/D&SC, district XEN.
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes	<ul style="list-style-type: none"> • Preventative maintenance schedule should be followed. • Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste 	Contractor	Environmental Consultant of PIU, Union Parishad

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

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<ul style="list-style-type: none"> Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries. 			
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light. 	UE	District XEN, LGED

Cost of Environmental and Social Enhancement Works in BOQ

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

Cost of Environmental Enhancement Works in BOQ

Sl. No.	Description of item	Quantity	Unit price	Total amount
1.	<p><u>Grass Turfing</u></p> <p>Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)</p>	458.4 Sq.m	@38.15 Tk. Per sqm	17,487.15
2.	<p><u>Dust suppression measures</u></p> <p>Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C</p>	382.0m	@ 2.56 BDT	977.92
3.	<p><u>Water Supply and Sanitation</u></p> <p>Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge.</p> <p>Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.</p>	2 nos.	@12822.86 per toilet	25,645.72

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
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Sl. No.	Description of item	Quantity	Unit price	Total amount
4.	<p><u>First Aid Box</u></p> <p>Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.</p>	1 no.	LS @5000 Tk. Per box	5,000.00
5.	<p><u>Drinking Water Facilities</u></p> <p>Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.</p>	1 no.	LS @ Tk. 30,000	30,000.00

Resilient Infrastructure for Adaptation and Vulnerability Reduction (RIVER) Project
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Sl. No.	Description of item	Quantity	Unit price	Total amount
6.	<p><u>Traffic Management</u></p> <p>Maintaining traffic management at worksite from time of commencement of contractor's activities to time of completion activities, including ensuring that the road is safe for users, providing a safe working area for those involved in work on trafficked network and minimizing any disruption to smooth flow of traffic (this includes providing necessary barricades, warning signs/lights, guide signs, flagmen, maintaining diversion roads by cutting, filling, constructing, etc. or by any other means) in accordance with the full satisfaction of the Engineering-in-charge.</p>	1 no.	LS @ Tk. 15,000	15,000.00
7.	<p><u>Personal Protection Equipment for Workers</u></p> <p>Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles</p>	LS	LS @ Tk 30,000	30,000.00
8.	<p><u>Motivation training</u></p> <p>Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.</p>	1 no.	LS @ Tk. 10,000	10,000.00

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Sl. No.	Description of item	Quantity	Unit price	Total amount
9.	<u>Waste disposal facility</u> Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000.00
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. <u>[One person to be appointed for 8 roads]</u>	Each	@ Tk. 35000	35,000.00
Total amount for this Road				209,110.79



Existing Surroundings of the Sub-Project

Name of Sub-Project: Radhaganj Biswas Bari Road to Bhangarhat Road; ID: 335514004

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

District: Gopalganj

Upazila: Kotalipara

Union: Radhaganj

Name of Community/Local Area: Digholia

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The proposed sub-project aims to improve an existing village road through the application of Bituminous Carpeting (BC). It also includes the rehabilitation, replacement, and construction of drainage structures along the road alignment to facilitate effective floodwater drainage and ensure the natural flow of water. The primary goal of the sub-project is to enhance road durability, provide safe and reliable transportation, and improve connectivity for the surrounding rural communities. The road improvement works will involve site preparation, earthworks, subgrade and base preparation, followed by the application of bituminous carpeting. These activities will primarily take place within the existing road corridor to the greatest extent possible, improving ride quality and ensuring all-weather accessibility. The sub-project also includes the construction of R.C.C. palisading at various locations along the road alignment. These works include a 57.02 m × 4 m (Right Side) section from Chainage (Ch.) 0–57.02 m, and a 65.0 m × 3 m (Left Side) section from Ch. 0–65.0 m. Additional palisading works include a 30 m × 4 m (Right Side) section at Ch. 75–105 m, a 17 m × 4 m (Left Side) section at Ch. 143–160 m, and a 22 m × 4 m (Left Side) section at Ch. 168–190 m. Further, a 24 m × 4 m (Right Side) section is proposed at Ch. 398–422 m. In the later sections of the alignment, palisading works include a 79 m × 3 m (Left Side) section from Ch. 770–849 m, a 49 m × 3 m (Right Side) section from Ch. 951–1000 m, and a 132 m × 3 m (Left Side) section from Ch. 951–1083 m. A final 28 m × 3 m (Right Side) section is included from Ch. 1020–1048 m, ensuring proper slope protection and structural stability along the roadway. The construction will require various materials such as sand, aggregates, cement, bitumen, bricks, steel, and water, which will be sourced from approved local suppliers, in compliance with 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, as well as Environmental and Social Mitigation measures, have been incorporated into the project design and cost estimates to ensure the safety, sustainability, and long-term resilience of the sub-project.

Estimated footprint / land area for this sub-project is 3,429 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 00m to 1143m. Detail Environmental features within 100m of the both sides from the centre line were collected @300m longitudinal intervals. The findings of the survey for the aforementioned road can be seen in the table below:

Table: Detailed Chainage length of the Sub-Project

Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		(0–205) – Pond, (205–252) – Residential house, (252–300) – Pond
		R	(0–105) – Pond, (200) – Temple (Lat: 23.05084, Long: 90.01763), (200–300) – Residential houses
300-600	L		(300–400) – Residential houses, (400–433) – Residential houses, (433–472) – Bridge, (485–520) – 75no.Dighalia Government Primary School + Eidgah + Graveyard+Madrasha
		R	(300–400) – Residential houses, 485 – Mosque, (485–550) – Cultivated land, (550–570) – Canal (width 30.0 m, 25.0 m away from road), 600 → house at the junction
600-900	L		(600–695) – Residential houses and land, (695–716) – Bridge, (716–858) – Canal, (858–900) – Residential houses
		R	(600–621) – Residential houses, (621–695) – canal, (695–716) – Bridge, (716–750) – Pond, (750–770) – Shop, (757–849) – Pond, (849–900) – Residential houses
900-1143	L		(900–1048) – Land, (1048–1115) – Dighalia Madrasha 4.0m, (1115–1139) – Bridge, (1139–1143) – Bridge’s slope at 1143
		R	(900–1007) – cultivated Land, (1007–1020) – Residential houses, (1020-1115) cultivated Land, (1115–1139) – Bridge, (1139–1143) – Bridge’s slope



Starting Point of Radhaganj Biswas Bari Road to Bhangherhat Road

Overall Comments

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

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

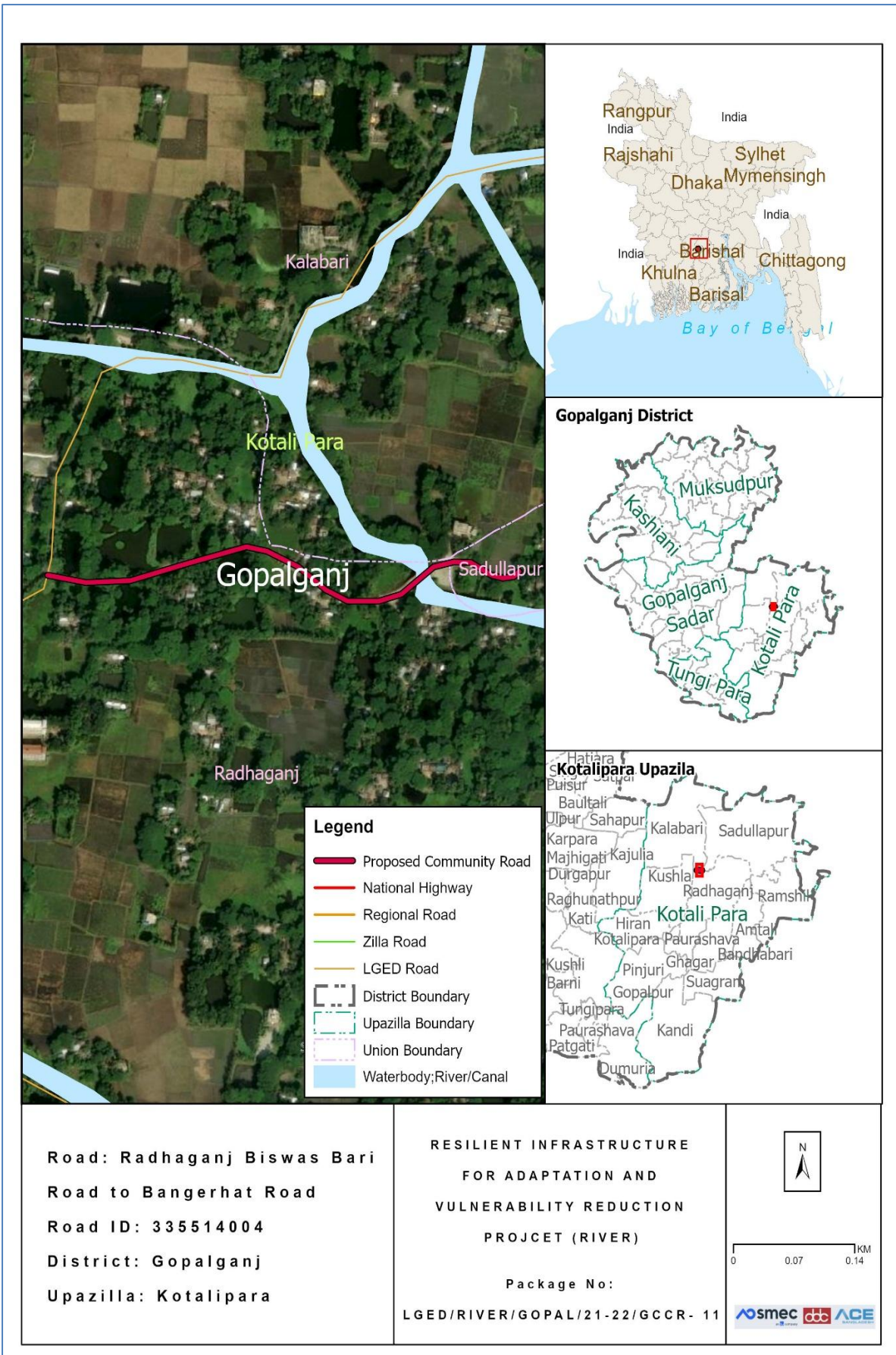
Types of waste to be generated during construction and operation phase:

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

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

No historical or archaeological sites were identified within the direct influence area of the proposed sub-project. The sub-project is located within Radhaganj and Bhangarhat villages under Radhaganj Union, Ward No. 5 of Kotalipara Upazila in Gopalganj District. 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, the following features are located: from 0–205 m, a pond; from 205–252 m, residential houses; from 252–300 m, a pond; from 300–400 m, residential houses; from

400–433 m, residential houses; from 433–472 m, a bridge; from 485–520 m, Dighalia Government Primary School, Eidgah, a graveyard, and Madrasha; from 600–695 m, residential houses and land; from 695–716 m, a bridge; from 716–858 m, a canal; from 858–900 m, residential houses; from 900–1048 m, land; from 1048–1115 m, Dighalia Madrasha (4.0m); from 1115–1139 m, a bridge; and from 1139–1143 m, the bridge's slope. At 1143 m, where the road ends, Robigaunj to Vangarhat road is located within approximately 1 km of the project site. On the right side of the alignment, the following features are present: from 0–105 m, a pond; at 200 m, a temple (Lat: 23.05084, Long: 90.01763); from 200–300 m, residential houses; from 300–400 m, residential houses; at 485 m, a mosque; from 485–550 m, cultivated land; from 550–570 m, a canal (30.0 m wide, 25.0 m from the road); at 600 m, a house at the junction; from 600–621 m, residential houses; from 621–695 m, a canal; from 695–716 m, a bridge; from 716–750 m, a pond; from 750–770 m, a shop; from 757–849 m, a pond; from 849–900 m, residential houses; from 900–1007 m, cultivated land; from 1007–1020 m, residential houses; from 1020–1115 m, cultivated land; from 1115–1139 m, a bridge; from 1139–1143 m, the bridge's slope. The road ends at Robigaunj to Vangarhat road, all situated within approximately 1 km of the project area. These institutions hold important religious, cultural, and educational significance for the local community. 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 institutions 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 Map of the proposed Community Road

Completed environmental and social screening forms are given below:

Section A: Sub-Project Overview

Description of sub-project/component interventions:

The sub-project is classified as a village road. Based on the field survey, this sub-project involves the rehabilitation of damaged sections through Bituminous Carpeting (BC). According to the project design, the road will be upgraded with Bituminous Carpeting (BC) along the entire alignment from Chainage 0 0m to Chainage 1143m.

Sub-project Location:

Important Features	
ID	335514004
District	Gopalgaunj
Upazila	Kotalipara
Union	Radhaganj
WARD	05
Total Chainage	1143m
Proposed Chainage	1143m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 23.05016" N Longitude: 90.0152" E
Road Ending Point Coordinates	Latitude: 23.05488" N Longitude: 90.02176" 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 Radhaganj and Bhangarhat villages. Some other villages named Digholia, Kalabari, West Golabari within one kilometer.
- ii) No historical sites were found
- iii) Not required to relocate local community.
- iv) Some trees, vegetation and livelihood will be affected.
- v) Very low chance of loss of agricultural land.
- vi) Some Household Boundary made of bamboo and tin may need adjustments.

Section B: Environmental and Social Screening

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

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

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

Several environmentally and socially sensitive establishments, including educational and religious institutions, are located within approximately 1 km of the project area. Along the left side of the road alignment, the following features are located: from 0–205 m, a pond; from 205–252 m, residential houses; from 252–300 m, a pond; from 300–400 m, residential houses; from 400–433 m, residential houses; from 433–472 m, a bridge; from 485–520 m, Dighalia Government Primary School, Eidgah, a graveyard, and Madrasha; from 600–695 m, residential houses and land; from 695–716 m, a bridge; from 716–858 m, a canal; from 858–900 m, residential houses; from 900–1048 m, land; from 1048–1115 m, Dighalia Madrasha (4.0m); from 1115–1139 m, a bridge; and from 1139–1143 m, the bridge's slope. At 1143 m, where the road ends, Robigaunj to Vangarhat road is located within approximately 1 km of the project site. On the right side of the alignment, the following features are present: from 0–105 m, a pond; at 200 m, a temple (Lat: 23.05084, Long: 90.01763); from 200–300 m, residential houses; from 300–400 m, residential houses; at 485 m, a mosque; from 485–550 m, cultivated land; from 550–570 m, a canal (30.0 m wide, 25.0 m from the road); at 600 m, a house at the junction; from 600–621 m, residential houses; from 621–695 m, a canal; from 695–716 m, a bridge; from 716–750 m, a pond; from 750–770 m, a shop; from 757–849 m, a pond; from 849–900 m, residential houses; from 900–1007 m, cultivated land; from 1007–1020 m, residential houses; from 1020–1115 m, cultivated land; from 1115–1139 m, a bridge; from 1139–1143 m, the bridge's slope. The road ends at Robigaunj to Vangarhat road, all situated within approximately 1 km of the project area. These institutions hold important religious, cultural, and educational significance for the local community. 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 institutions 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. 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 specific to Gopalganj District is not readily available; however, the overall air quality in the district is generally good due to its rural environment, with a significant presence of vegetation and agricultural land. A minor amount of dust is generated by local transportation activities, including motorcycles, auto-rickshaws, tempos, trolleys, van-garis, and bicycles traveling on the existing road network. This dust contributes slightly to localized air pollution in the area.

Construction activities during the dry season, along with the transportation of large quantities of construction materials, may lead to an increase in dust and a rise in the concentration of vehicle-related pollutants. Such impacts may temporarily affect the local population residing and working near the project site. However, these effects are anticipated to be negative but short-term, site-specific within a confined area, and reversible or manageable through the implementation of appropriate mitigation measures.

Noise:

The baseline noise levels in Gopalganj District are generally low. Noise is primarily generated from daily activities, including the movement of local residents and vehicles. During the construction phase, noise levels may experience a temporary increase due to the operation of construction equipment and the transportation of materials. These noise impacts are expected to be brief, confined to the construction period, and localized.

Baseline soil quality:

The soil in Gopalganj District is predominantly composed of alluvial, sandy, and silty loam formations, typical of the northern floodplain region of Bangladesh. The soils here are generally formed from riverine alluvial deposits and exhibit a range of textures from sandy loam to clay loam. These soils are moderately fertile, supporting a variety of agricultural activities in the surrounding rural areas. The fertile nature of the soil makes it conducive to the cultivation of crops, contributing to the agricultural economy of the region.

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 150 to 450 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, heron/egret, crow, common myna 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 occasional vultures, 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. The catchment also supports a varied assemblage of freshwater to slightly brackish fish, including locally important species such as rohu, catla, snakehead murrel, common carp, shrimp, banded shorputi (barb), royna (local carp), bain (spiny eel), and balia, alongside typical floodplain fauna. 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 ponds, ditches, and canals are present along the route.

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

<p>Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles:</p> <p>No</p>
<p>Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description)</p> <p>No</p>
<p>Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description)</p> <p>No.</p>
<p>Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)</p> <p>There is no possibility of stagnant water bodies remained for encouraging mosquito breeding and other disease vectors, during the operation phase.</p>
<p>Likely direct and indirect impacts on economic development in the project areas by the sub-project:</p> <p>Construction or implementation of a road project substantially contributes to the development of the project areas. It surely improves the communication network, reduces the transport time, increases the trade and business in/around the areas, and ensures access to better living conditions with amenities, better educational and job opportunities and health facilities. Thus, the direct and indirect impacts on economic development in the project areas would be enormous by this sub-project.</p>
<p>Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)</p> <p>No existing drainage channels or surface water bodies found in the project area, therefore, no such effect can be anticipated.</p>
<p>Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)</p> <p>There are no protected areas in or around project sites, and no known areas of ecological interest.</p>
<p>Activities leading to landslides, slumps, slips and other mass movements in road cuts:</p> <p>The entire sub-project component area is nearly flat, thus no such type of impacts is anticipated.</p>

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: Radhaganj Biswas Bari Road to Bhangarhat Road

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

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

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

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

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

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

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

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		<p>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.</p> <ul style="list-style-type: none"> • If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority need to be taken before extraction or setting up bore wells. • Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. • Local community must be consulted before any construction works start. 		
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> • Maintain safety measures during the movement of heavy machinery and equipment. • Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness. 	Contractor	Environmental Consultant of PIU
Construction	Labor Base Camp:	<ul style="list-style-type: none"> • Awareness building session will be undertaken 	Contractor	Social

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

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

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

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

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		<p>etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area.</p> <ul style="list-style-type: none"> • 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 		

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		that the correct methods are being used.		
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> • Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • 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.

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

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

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>accidents. The accidents may also be due to tiredness of drivers.</p> <ul style="list-style-type: none"> Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries. 	<p>at appropriate locations to aware drivers about likely accidents due to over speeding.</p> <ul style="list-style-type: none"> All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time. 		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light. 	UE	District XEN, LGED

Cost of Environmental and Social Enhancement Works in BOQ

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

Cost of Environmental Enhancement Works in BOQ

Sl. No.	Description of item	Quantity	Unit price	Total amount
1.	<p><u>Grass Turfing</u></p> <p>Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)</p>	1,371.6 Sq.m	@38.15 Tk. Per sqm	52,326.54
2.	<p><u>Dust suppression measures</u></p> <p>Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C</p>	1,143.0m	@ 2.56 BDT	2,926.08
3.	<p><u>Water Supply and Sanitation</u></p> <p>Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge.</p> <p>Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.</p>	2 nos.	@12822.86 per toilet	25,645.72

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Sl. No.	Description of item	Quantity	Unit price	Total amount
4.	<p><u>First Aid Box</u></p> <p>Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.</p>	1 no.	LS @5000 Tk. Per box	5,000.00
5.	<p><u>Drinking Water Facilities</u></p> <p>Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.</p>	1 no.	LS @ Tk. 30,000	30,000.00
6.	<p><u>Traffic Management</u></p> <p>Maintaining traffic management at worksite from time of commencement of contractor's activities to time of completion activities, including ensuring that the road is safe for users, providing a safe working area for those involved in work on trafficked network and minimizing any disruption to smooth flow of traffic (this includes providing necessary barricades, warning signs/lights, guide signs, flagmen, maintaining diversion roads by cutting, filling, constructing, etc. or by any other means) in accordance with the full</p>	1 no.	LS @ Tk. 15,000	15,000.00

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Sl. No.	Description of item	Quantity	Unit price	Total amount
	satisfaction of the Engineering-in-charge.			
7.	<p><u>Personal Protection Equipment for Workers</u></p> <p>Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles</p>	LS	LS @ Tk 30,000	30,000.00
8.	<p><u>Motivation training</u></p> <p>Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.</p>	1 no.	LS @ Tk. 10,000	10,000.00
9.	<p><u>Waste disposal facility</u></p> <p>Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.</p>	LS	@ Tk. 5000	5,000.00
10.	<p><u>Water Test (Drinking Water samples)</u></p> <p>Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.</p>	LS	@ Tk. 5000	5,000.00

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Sl. No.	Description of item	Quantity	Unit price	Total amount
11.	<p><u>Working labour shed:</u></p> <p>Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.</p>	1 no.	LS @ Tk. 30,000	30,000.00
12.	<p><u>Environmental management</u></p> <p>Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax &VAT). And as per direction of the E.I.C. [One person to be appointed for 8 roads]</p>	Each	@ Tk. 35000	35,000.00
Total amount for this Road				245,898.34



Existing Surroundings of the Sub-Project

Name of Sub-Project: Joaria Bazar RHD Sitla Mondir- Mitradanga RHD (Bridge); ID: 335914076

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

District: Gopalganj

Upazila: Tungipara

Union: Gopalpur

Name of Community/Local Area: Joaria

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 possible in order to improve riding quality and ensure all-weather accessibility. The sub-project includes the installation of palisading/slope protection measuring 37 m on the left side (L/S) from Chainage (Ch.) 2033 m to 2096 m. In addition, palisading works include 35 m on the left side at Ch. 2136 m to 2171 m, 60 m on the right side (R/S) at Ch. 2126 m to 2186 m, and 38 m on both sides (B/S) at Ch. 2226 m to 2264 m. Further sections comprise 15 m of palisading on the right side at Ch. 2426 m to 2441 m, and 87 m on the left side at Ch. 2561 m to 2648 m to ensure slope stability and protection along the road alignment. Construction activities will require materials such as sand, aggregates, cement, bitumen, bricks, steel, and water, which will be procured from approved local suppliers in accordance with applicable environmental and procurement guidelines. The project footprint will remain largely within the existing road alignment in order to minimize potential environmental and social impacts. Appropriate road safety measures and Environmental and Social Mitigation measures have been incorporated into the project design and cost estimates to ensure the safety, sustainability, and resilience of the sub-project.

Estimated footprint / land area for this sub-project is 4,800 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 00m to 1600m. Detail Environmental features within 100m of the both sides from the centre line were collected @300m longitudinal intervals. The findings of the survey for the aforementioned road can be seen in the table below:

Table: Detailed Chainage length of the Sub-Project

Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
1496 – 1796	L		Agricultural Land and Fish Pond
		R	River (80 m width) Road to River distance 10 m
1796 – 2096	L		Agricultural Land
		R	River (80 m width) Road to River Distance 10 m
2096 – 2396	L		Agricultural Land
		R	River (95 m width) Road to River distance 06 m
2396 – 2696	L		Agricultural Land and Fish Pond + chicken farm
		R	Agricultural Land and Fish Pond + chicken farm
2696 – 2996	L		Agricultural Land and Fish Pond
		R	House
2996 – 3096	L		Hat Bazar shops
		R	Hat Bazar shops + electric pole



Starting Point of Joaria Bazar RHD Sitla Mondir- Mitradanga RHD (Bridge)

Overall Comments

D&SC conducted consultation meeting with community regarding the sub-project activities. Local people of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The local individuals were participated in participatory public consultation meeting. Local communities have no objection to construction this sub-project. The community also appreciated the initiative for having easily accessible and passive their emergency situation. The proposed sub-project is not located within any remarkable environmentally sensitive area and will not cause any severe effect to the environmental setting of the area thus not going to create intimidation

to important environmental features. No drainage congestion/water logging have been observed in the road area. But, some local trees like betel nut, rain tree etc., or additional vegetation may need to clear out due to construction activities, with appropriate offsetting measures to be taken. No agricultural productive soil will be used for the purpose. Earth will be compacted for stabilization. The inputs will be mainly at construction phase and limited within project boundary. Moreover, mitigation measures will be taken according to the ESMP for minimizing the air, dust and noise pollution.

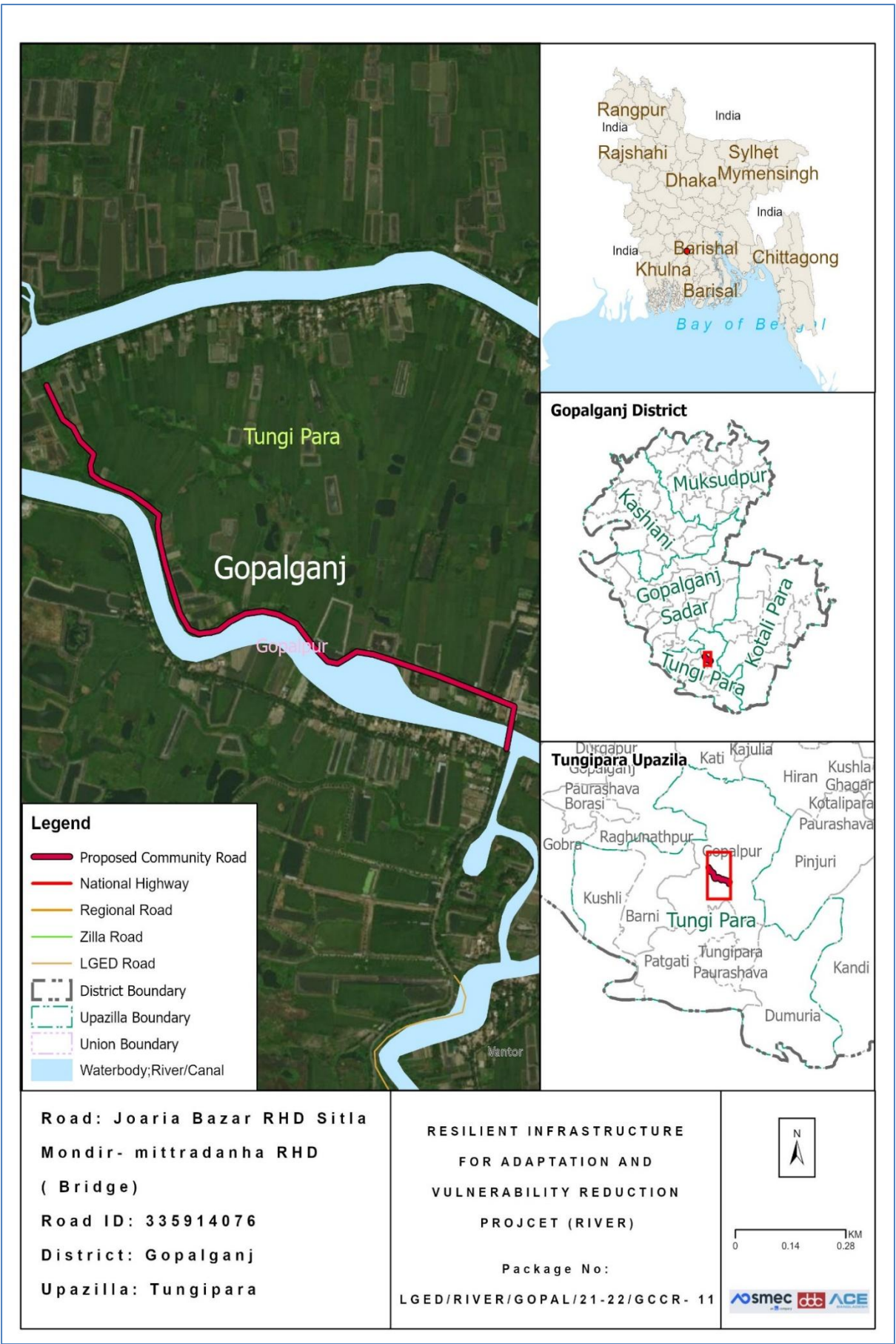
It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issue has also been brought to their attention that drainage system and cross drains, culverts have also been included into the evaluation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

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

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

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

No historical or archaeological sites were identified within the direct influence area of the proposed sub-project. The sub-project is located within Joyaria, Gopalpur and Mitradanga villages under Gopalpur Union, Ward No. 8 of Tungipara Upazila in Gopalganj District. 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, chicken farm, hat bazar and agricultural land, as well as Joyaria High School (500m), Joyariya Govt Primary School (600m) within approximately 1 km of the project site. Along the right side of the alignment, agricultural land, pond, river, bazar, electric pole are located within approximately 1 km of the project area. These institutions hold important religious, cultural, and educational significance for the local community. 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 institutions 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 Map of the proposed Community Road

Completed environmental and social screening forms are given below:

Section A: Sub-Project Overview

Description of sub-project/component interventions:
 The sub-project is classified as a village road. Based on the field survey, this sub-project involves the rehabilitation of damaged sections through Bituminous Carpeting (BC). According to the project design, the road will be upgraded with Bituminous Carpeting (BC) along the entire alignment from Chainage 0 0m to Chainage 1600 m.

Sub-project Location:

Important Features	
ID	335914076
District	Gopalganj
Upazila	Tungipara
Union	Gopalpur
WARD	08
Total Chainage	1600m
Proposed Chainage	1600m
Road Type	Village Road
Proposed Intervention Type	Unpaved/Earthen
Road Starting Point Coordinates	Latitude: 22°57'03.72" N Longitude: 89°54'10.61" E
Road Ending Point Coordinates	Latitude: 22°56'38.99" N Longitude: 89°54'49.36" 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 Joariya, Mitradanga and Gopalpur villages. Some other villages bannabari and tarail within one kilometer.
- ii) No historical sites were found
- iii) Not required to relocate local community.
- iv) Some trees, vegetation and livelihood will be affected.
- v) Very low chance of loss of agricultural land.
- vi) Some Household Boundary made of bamboo and tin may need adjustments.

Section B: Environmental and Social Screening

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

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

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

Several environmentally and socially sensitive establishments, including educational and religious institutions, are located within approximately 1 km of the project area. Along the left side of the road alignment, these include ponds, chicken farm, hat bazar and agricultural land, as well as Joyaria High School (500m), Joyariya Govt Primary School (600m) within approximately 1 km of the project site. Along the right side of the alignment, agricultural land, pond, river, bazar, electric pole are located within approximately 1 km of the project area. These institutions hold important religious, cultural, and educational significance for the local community. 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 institutions 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. 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 specific to Gopalganj District is not readily available; however, the overall air quality in the district is generally good due to its rural environment, with a significant presence of vegetation and agricultural land. A minor amount of dust is generated by local transportation activities, including motorcycles, auto-rickshaws, tempos, trolleys, van-garis, and bicycles traveling on the existing road network. This dust contributes slightly to localized air pollution in the area.

Construction activities during the dry season, along with the transportation of large quantities of construction materials, may lead to an increase in dust and a rise in the concentration of vehicle-related pollutants. Such impacts may temporarily affect the local population residing and working near the project site. However, these effects are anticipated to be negative but short-term, site-specific within a confined area, and reversible or manageable through the implementation of appropriate mitigation measures.

Noise:

The baseline noise levels in Gopalganj District are generally low. Noise is primarily generated

from daily activities, including the movement of local residents and vehicles. During the construction phase, noise levels may experience a temporary increase due to the operation of construction equipment and the transportation of materials. These noise impacts are expected to be brief, confined to the construction period, and localized.

Baseline soil quality:

The soil in Gopalganj District is predominantly composed of alluvial, sandy, and silty loam formations, typical of the northern floodplain region of Bangladesh. The soils here are generally formed from riverine alluvial deposits and exhibit a range of textures from sandy loam to clay loam. These soils are moderately fertile, supporting a variety of agricultural activities in the surrounding rural areas. The fertile nature of the soil makes it conducive to the cultivation of crops, contributing to the agricultural economy of the region.

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 100 to 450 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 681 μ s/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, heron/egret, crow, common myna and Choroi (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 occasional vultures, 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. The catchment also supports a varied assemblage of freshwater to slightly brackish fish, including locally important species such as rohu, catla, snakehead murrel, common carp, shrimp, banded shorputi (barb), royna (local carp), bain (spiny eel), and balia, alongside typical floodplain fauna. 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 ponds, ditches, rivers, and palisades, are present along the route.

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: Joaria Bazar RHD Sitla Mondir- Mitradanga RHD (Bridge)

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

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

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

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

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

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

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

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		<p>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.</p> <ul style="list-style-type: none"> • If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority need to be taken before extraction or setting up bore wells. • Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. • Local community must be consulted before any construction works start. 		
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> • Maintain safety measures during the movement of heavy machinery and equipment. • Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness. 	Contractor	Environmental Consultant of PIU
Construction	Labor Base Camp:	<ul style="list-style-type: none"> • Awareness building session will be undertaken about 	Contractor	Social

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Activity	Conflicts with the local residents	<p>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.</p> <ul style="list-style-type: none"> • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation. 		Development Specialist and Gender Specialist of PIU
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> • A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance 		

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

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

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

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		<p>Emergency evacuation response plan will exist in sub-project area.</p> <ul style="list-style-type: none"> • 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. 		

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> • Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface runoff. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • 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. 	Contractor	Environmental Consultant of PIU/D&SC.

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

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

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<ul style="list-style-type: none"> Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries. 			
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light. 	UE	District XEN, LGED

Cost of Environmental and Social Enhancement Works in BOQ

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

Cost of Environmental Enhancement Works in BOQ

Sl. No.	Description of item	Quantity	Unit price	Total amount
1.	<p><u>Grass Turfing</u></p> <p>Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)</p>	1,920 Sq.m	@38.15 Tk. Per sqm	73,248.00
2.	<p><u>Dust suppression measures</u></p> <p>Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C</p>	1,600.0m	@ 2.56 BDT	4,096.00
3.	<p><u>Water Supply and Sanitation</u></p> <p>Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge.</p> <p>Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.</p>	2 nos.	@12822.86 per toilet	25,645.72

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Sl. No.	Description of item	Quantity	Unit price	Total amount
4.	<p><u>First Aid Box</u></p> <p>Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.</p>	1 no.	LS @5000 Tk. Per box	5,000.00
5.	<p><u>Drinking Water Facilities</u></p> <p>Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.</p>	1 no.	LS @ Tk. 30,000	30,000.00
6.	<p><u>Traffic Management</u></p> <p>Maintaining traffic management at worksite from time of commencement of contractor's activities to time of completion activities, including ensuring that the road is safe for users, providing a safe working area for those involved in work on trafficked network and minimizing any disruption to smooth flow of traffic (this includes providing necessary barricades, warning signs/lights, guide signs, flagmen,</p>	1 no.	LS @ Tk. 15,000	15,000.00

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Sl. No.	Description of item	Quantity	Unit price	Total amount
	maintaining diversion roads by cutting, filling, constructing, etc. or by any other means) in accordance with the full satisfaction of the Engineering-in-charge.			
7.	<p><u>Personal Protection Equipment for Workers</u></p> <p>Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles</p>	LS	LS @ Tk 30,000	30,000.00
8.	<p><u>Motivation training</u></p> <p>Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.</p>	1 no.	LS @ Tk. 10,000	10,000.00
9.	<p><u>Waste disposal facility</u></p> <p>Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.</p>	LS	@ Tk. 5000	5,000.00
10.	<p><u>Water Test (Drinking Water samples)</u></p> <p>Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron,</p>	LS	@ Tk. 5000	5,000.00

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Sl. No.	Description of item	Quantity	Unit price	Total amount
	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.			
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 8 roads]	Each	@ Tk. 35000	35,000.00
Total amount for this Road				267,989.72



Existing Surroundings of the Sub-Project

Name of Sub-Project: Dumuria UP office- Pakurtia Bazar Road; ID: 335913006

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

District: Gopalganj

Upazila: Tungipara

Union: Dumuria

Name of Community/Local Area: Soto Dumuria

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 possible in order to improve riding quality and ensure all-weather accessibility. The sub-project includes the construction of palisading/slope protection works at multiple locations along the road. These comprise a 90 m long section on the left side (L/S) from Chainage (Ch.) 250 m to 340 m, a 13 m section on the right side (R/S) from Ch. 277 m to 290 m, a 45 m L/S section from Ch. 395 m to 440 m, and an 8 m L/S section from Ch. 478 m to 486 m. Additional works include an 18 m L/S section from Ch. 790 m to 808 m, a 14 m L/S section from Ch. 865 m to 879 m, and a 97 m L/S section from Ch. 928 m to 1025 m. Further, palisading will be provided on the right side with a 14 m section from Ch. 984 m to 998 m, a 5 m section from Ch. 1095 m to 1100 m, and another 14 m section from Ch. 1129 m to 1143 m. On the left side, additional sections include 25 m from Ch. 1152 m to 1177 m and 54 m from Ch. 1184 m to 1330 m to ensure slope stability and protection against erosion along the project corridor. Construction activities will require materials such as sand, aggregates, cement, bitumen, bricks, steel, and water, which will be procured from approved local suppliers in accordance with applicable environmental and procurement guidelines. The project footprint will remain largely within the existing road alignment in order to minimize potential environmental and social impacts. Appropriate road safety measures and Environmental and Social Mitigation measures have been incorporated into the project design and cost estimates to ensure the safety, sustainability, and resilience of the sub-project.

Estimated footprint / land area for this sub-project is 4,958 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 00m to 1340m. Detail Environmental features within 100m of the both sides from the centre line were collected @300m longitudinal intervals. The findings of the survey for the aforementioned road can be seen in the table below:

Table: Detailed Chainage length of the Sub-Project

Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		UP Office (Road to UP Office Distance-05m)
		R	High school (Distance-15m) GPS (Distance 10m) Mondir (Distance-01m) Big old Tree (Distance-03m) Hat-Bazar-shop (on the Road) Community Hospital (Distance-02m)
300-600	L		River (70m Width) Road to River Distance-05m
		R	Human Settlement
600-900	L		RIVER (80m Width) Road to River Distance-07m
		R	Human Settlement
900-1200	L		River (40m Width) Road to RIVER Distance-05m
		R	Human Settlement
1200-1340	L		River (60m Width) Road to River Distance-05m
		R	Human Settlement & Agricultural land.



Starting Point of Dumuria UP office- Pakurtia Bazar Road

Overall Comments

D&SC conducted consultation meeting with community regarding the sub-project activities. Local people of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. The local individuals were participated in participatory public consultation meeting. Local communities have no objection to construction this sub-project. The community also appreciated the initiative for having easily accessible and passive their emergency situation. The proposed sub-project is not located within any remarkable environmentally sensitive area and will not cause any

severe effect to the environmental setting of the area thus not going to create intimidation to important environmental features. No drainage congestion/water logging have been observed in the road area. But, some local trees like 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.

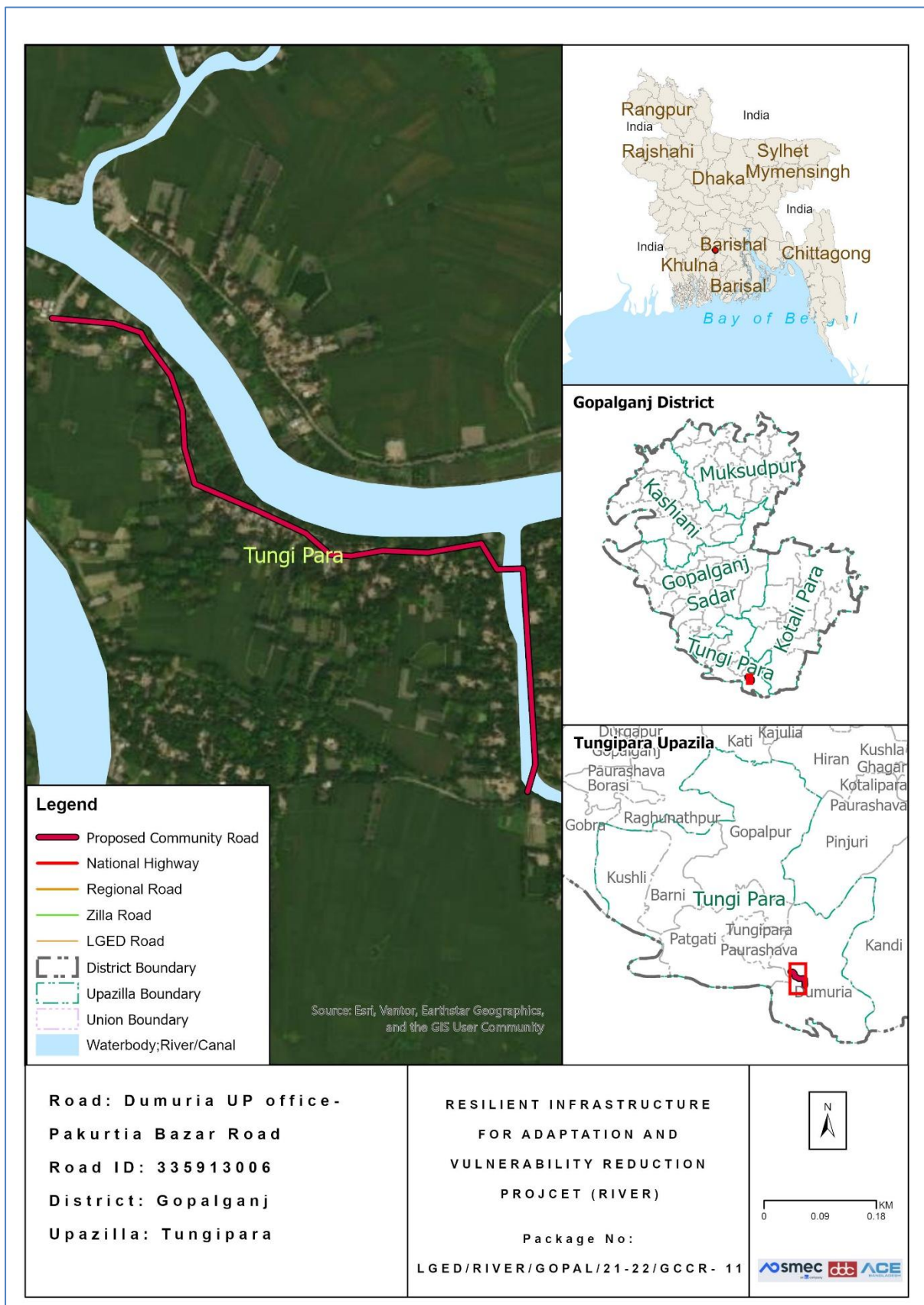
Types of waste to be generated during construction and operation phase:

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 have been identified within the direct area of influence of the proposed sub-project. The project is situated in Dumuria and Soto Dumuria villages under Dumuria Union, Ward No. 6, within Tungipara Upazila of Gopalganj District. Within an approximate radius of 1 km from the project area, several environmentally and socially sensitive receptors are present, including educational and religious institutions. On the left side of the road alignment, these include the Union Parishad (UP) Office (approximately 5 m from the road), and multiple river channels of varying widths—approximately 70 m, 80 m, 40 m, and 60 m—located at distances ranging from 5 m to 7 m from the road alignment. On the right side of the alignment, key features include a high school (approximately 15 m away), a GPS (Government Primary School) at a distance of about 10 m, a temple (Mondir) located approximately 1 m from the road, a large old tree at around 3 m, a hat-bazar with roadside shops, a community hospital at approximately 2 m distance, as well as surrounding human settlements and agricultural land within the same 1 km buffer zone. These establishments are of considerable religious, cultural, and educational importance to the local community. However, since the proposed sub-project activities will be confined primarily within the existing road alignment, no significant adverse impacts or disturbances to these nearby sensitive receptors are anticipated. Nevertheless, appropriate precautionary measures and

environmental management practices will be implemented during the construction phase to ensure the protection and preservation of these sensitive sites.



Location Map of the proposed Community Road

Completed environmental and social screening forms are given below:

Section A: Sub-Project Overview

Description of sub-project/component interventions:
 The sub-project is classified as a village road. Based on the field survey, this sub-project involves the rehabilitation of damaged sections through Bituminous Carpeting (BC). According to the project design, the road will be upgraded with Bituminous Carpeting (BC) along the entire alignment from Chainage 0 0m to Chainage 1340 m.

Sub-project Location:

Important Features	
ID	335913006
District	Gopalganj
Upazila	Tungipara
Union	Dumuria
WARD	06
Total Chainage	1340m
Proposed Chainage	1340m
Road Type	Union Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 22°57'19.91" N Longitude: 89°55'47.63" E
Road Ending Point Coordinates	Latitude: 22°52'54.40" N Longitude: 89°56'98" 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 Dumuria, Soto Dumuria villages Some other villages named Pakurtia within one kilometer.
- ii) No historical sites were found
- iii) Not required to relocate local community.
- iv) Some trees, vegetation and livelihood will be affected.
- v) Very low chance of loss of agricultural land.
- vi) Some Household Boundary made of bamboo and tin may need adjustments.

Section B: Environmental and Social Screening

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

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

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

Several environmentally and socially sensitive establishments, including educational and religious institutions, are located within approximately 1 km of the project area. On the left side of the road alignment, these include the Union Parishad (UP) Office (approximately 5 m from the road), and multiple river channels of varying widths—approximately 70 m, 80 m, 40 m, and 60 m—located at distances ranging from 5 m to 7 m from the road alignment. On the right side of the alignment, key features include a high school (approximately 15 m away), a GPS (Government Primary School) at a distance of about 10 m, a temple (Mondir) located approximately 1 m from the road, a large old tree at around 3 m, a hat-bazar with roadside shops, a community hospital at approximately 2 m distance, as well as surrounding human settlements and agricultural land within the same 1 km buffer zone. These establishments are of considerable religious, cultural, and educational importance to the local community. However, since the proposed sub-project activities will be confined primarily within the existing road alignment, no significant adverse impacts or disturbances to these nearby sensitive receptors are anticipated. Nevertheless, appropriate precautionary measures and environmental management practices will be implemented during the construction phase to ensure the protection and preservation of these sensitive sites.

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 specific to Gopalganj District is not readily available; however, the overall air quality in the district is generally good due to its rural environment, with a significant presence of vegetation and agricultural land. A minor amount of dust is generated by local transportation activities, including motorcycles, auto-rickshaws, tempos, trolleys, van-garis, and bicycles traveling on the existing road network. This dust contributes slightly to localized air pollution in the area.

Construction activities during the dry season, along with the transportation of large quantities of construction materials, may lead to an increase in dust and a rise in the concentration of vehicle-related pollutants. Such impacts may temporarily affect the local population residing and working near the project site. However, these effects are anticipated to be negative but short-term, site-specific within a confined area, and reversible or manageable through the implementation of appropriate mitigation measures.

Noise:

The baseline noise levels in Gopalganj District are generally low. Noise is primarily generated from daily activities, including the movement of local residents and vehicles. During the construction phase, noise levels may experience a temporary increase due to the operation of construction equipment and the transportation of materials. These noise impacts are expected to be brief, confined to the construction period, and localized.

Baseline soil quality:

The soil in Gopalganj District is predominantly composed of alluvial, sandy, and silty loam formations, typical of the northern floodplain region of Bangladesh. The soils here are generally formed from riverine alluvial deposits and exhibit a range of textures from sandy loam to clay loam. These soils are moderately fertile, supporting a variety of agricultural activities in the surrounding rural areas. The fertile nature of the soil makes it conducive to the cultivation of crops, contributing to the agricultural economy of the region.

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 50 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 681 μ s/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, heron/egret, crow, common myna and Choroi (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 occasional vultures, 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. The catchment also supports a varied assemblage of freshwater to slightly brackish fish, including locally important species such as rohu, catla, snakehead murrel, common carp, shrimp, banded shorputi (barb), royna (local carp), bain (spiny eel), and balia, alongside typical floodplain fauna. 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 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 existing drainage system has been identified along the project alignment. However, several natural drainage features, including ponds, ditches, and rivers are present along the route.

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: Dumuria UP office- Pakurtia Bazar Road

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

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

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

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

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

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

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

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		<p>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.</p> <ul style="list-style-type: none"> • If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority need to be taken before extraction or setting up bore wells. • Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. • Local community must be consulted before any construction works start. 		
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> • Maintain safety measures during the movement of heavy machinery and equipment. • Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness. 	Contractor	Environmental Consultant of PIU
Construction	Labor Base Camp:	<ul style="list-style-type: none"> • Awareness building session will be undertaken 	Contractor	Social

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

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

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

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

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area.</p> <ul style="list-style-type: none"> • 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 		

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		that the correct methods are being used.		
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> • Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • 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.

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

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

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	<p>accidents. The accidents may also be due to tiredness of drivers.</p> <ul style="list-style-type: none"> Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries. 	<p>at appropriate locations to aware drivers about likely accidents due to over speeding.</p> <ul style="list-style-type: none"> All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time. 		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light. 	UE	District XEN, LGED

Cost of Environmental and Social Enhancement Works in BOQ

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

Cost of Environmental Enhancement Works in BOQ

Sl. No.	Description of item	Quantity	Unit price	Total amount
1.	<p><u>Grass Turfing</u></p> <p>Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)</p>	1,608 Sq.m	@38.15 Tk. Per sqm	61,345.20
2.	<p><u>Dust suppression measures</u></p> <p>Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C</p>	1,340.0m	@ 2.56 BDT	3,430.40
3.	<p><u>Water Supply and Sanitation</u></p> <p>Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge.</p> <p>Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.</p>	2 nos.	@12822.86 per toilet	25,645.72

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Sl. No.	Description of item	Quantity	Unit price	Total amount
4.	<p><u>First Aid Box</u></p> <p>Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.</p>	1 no.	LS @5000 Tk. Per box	5,000.00
5.	<p><u>Drinking Water Facilities</u></p> <p>Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.</p>	1 no.	LS @ Tk. 30,000	30,000.00
6.	<p><u>Traffic Management</u></p> <p>Maintaining traffic management at worksite from time of commencement of contractor's activities to time of completion activities, including ensuring that the road is safe for users, providing a safe working area for those involved in work on trafficked network and minimizing any disruption to smooth flow of traffic (this includes providing necessary barricades, warning signs/lights, guide signs, flagmen,</p>	1 no.	LS @ Tk. 15,000	15,000.00

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Sl. No.	Description of item	Quantity	Unit price	Total amount
	maintaining diversion roads by cutting, filling, constructing, etc. or by any other means) in accordance with the full satisfaction of the Engineering-in-charge.			
7.	<p><u>Personal Protection Equipment for Workers</u></p> <p>Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles</p>	LS	LS @ Tk 30,000	30,000.00
8.	<p><u>Motivation training</u></p> <p>Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.</p>	1 no.	LS @ Tk. 10,000	10,000.00
9.	<p><u>Waste disposal facility</u></p> <p>Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.</p>	LS	@ Tk. 5000	5,000.00
10.	<p><u>Water Test (Drinking Water samples)</u></p> <p>Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic,</p>	LS	@ Tk. 5000	5,000.00

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Sl. No.	Description of item	Quantity	Unit price	Total amount
	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.			
11.	<p><u>Working labour shed:</u></p> <p>Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.</p>	1 no.	LS @ Tk. 30,000	30,000.00
12.	<p><u>Environmental management</u></p> <p>Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax &VAT). And as per direction of the E.I.C. [One person to be appointed for 8 roads]</p>	Each	@ Tk. 35000	35,000.00
Total amount for this Road				255,421.32



Existing Surroundings of the Sub-Project

Name of Sub-Project: Gadar Vajondi GPS to Baksha Khola road via Golger Munshi house road; ID: 335584200

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

District: Gopalganj

Upazila: Muksudpur

Union: Dig Nogar

Name of Community/Local Area: Gadar Vajondi

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 possible in order to improve riding quality and ensure all-weather accessibility. The sub-project includes the construction of culvert slope protection with palisading measuring 28 m × 5 m at Chainage (Ch.) 500 m, along with slope protection with palisading measuring 18 m × 5 m at Ch. 552 m, 25 m × 5 m at Ch. 945 m, 24 m × 5 m at Ch. 970 m, and 23 m × 5 m at Ch. 1328 m, to ensure slope stability and prevent erosion at critical locations along the road. Construction activities will require materials such as sand, aggregates, cement, bitumen, bricks, steel, and water, which will be procured from approved local suppliers in accordance with applicable environmental and procurement guidelines. The project footprint will remain largely within the existing road alignment in order to minimize potential environmental and social impacts. Appropriate road safety measures and Environmental and Social Mitigation measures have been incorporated into the project design and cost estimates to ensure the safety, sustainability, and resilience of the sub-project.

Estimated footprint / land area for this sub-project is 4,365 sqm.

Important Environmental and Social Features near site:

Detail Chainage Length of the sub-project: 00m to 2465m. Detail Environmental features within 100m of the both sides from the centre line were collected @300m longitudinal intervals. The findings of the survey for the aforementioned road can be seen in the table below:

Table: Detailed Chainage length of the Sub-Project

Chainage	Orientation (Left/Right)		Social/Economic/Cultural/Environmental Features (With distance from the centerline of the road)
00-300	L		Agricultural land.
		R	Agricultural land.
300-600	L		Agricultural land, pond land = 00–552 m
		R	Agricultural land.
600-900	L		Big old trees, human Settlement, agricultural land.
		R	Big old trees, human Settlement, agricultural land.
900-1200	L		pond (945–970) = 25 m, human Settlement, Agricultural land, masjid (10 m) = 1060 m
		R	pond (970–994) = 24 m, Big old trees, human settlement, shop (1060 m) = 2 m, Agricultural land.
1200-1500	L		Human Settlement, agricultural land.
		R	pond (1328–1351) m = 23 m, human Settlement, agricultural land.



Starting Point of Gadar Vajondi GPS to Baksha Khola road via Golger Munshi 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 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.

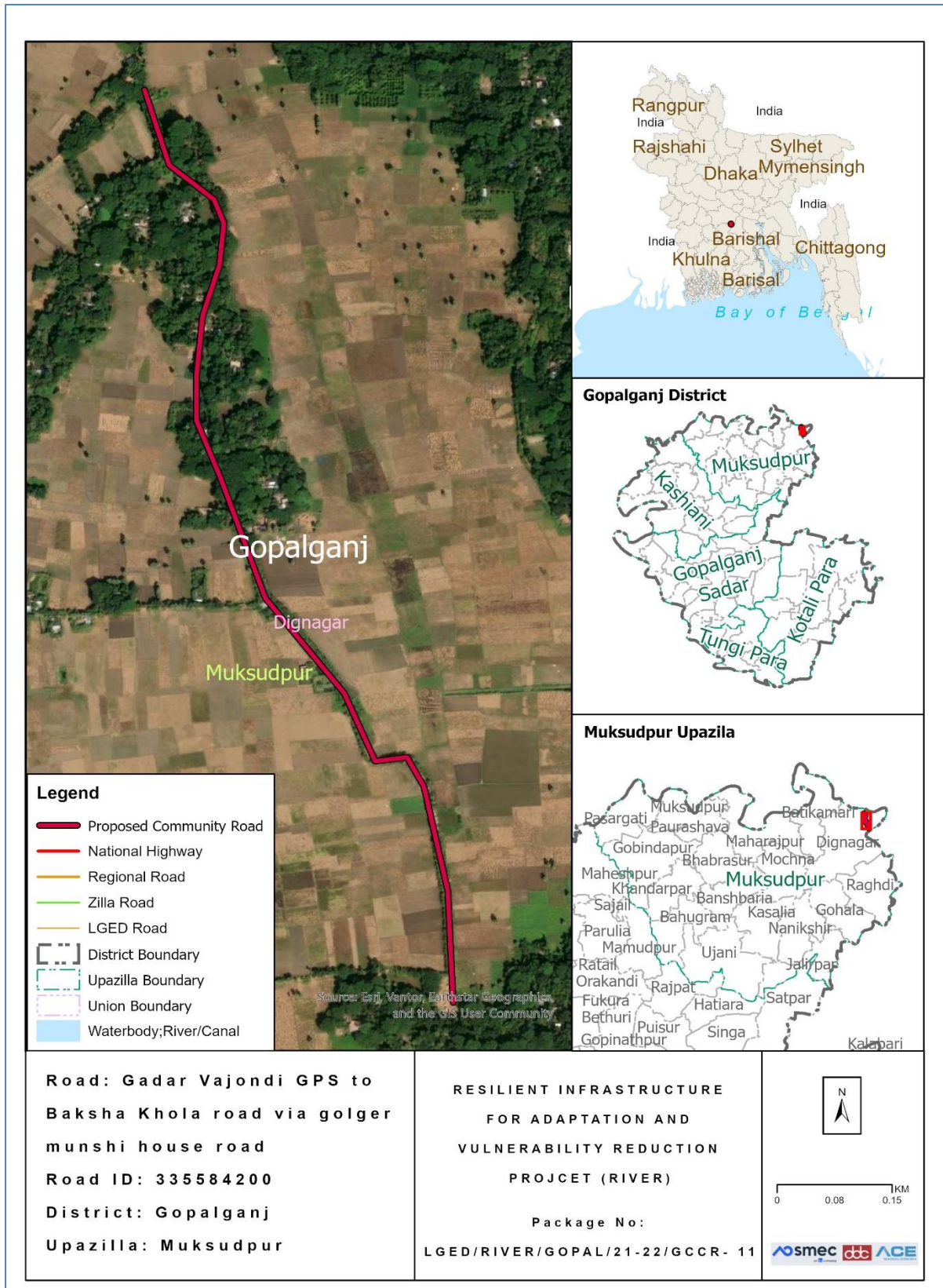
Types of waste to be generated during construction and operation phase:

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 have been identified within the direct area of influence of the proposed sub-project. The project is located in Gader Vajondi and Bakshakhola villages under Dig Nagar Union, Ward No. 4, within Muksudpur Upazila of Gopalganj District. Within an approximate 1 km radius of the project area, several environmentally and socially sensitive receptors, including educational and religious establishments, are present. Along the left side of the road alignment, the surrounding features include agricultural land and pond areas extending from chainage 00–552 m, a pond between 945–970 m (approximately 25 m in length), human settlements, agricultural land, and a mosque located at around 1060 m with a setback distance of approximately 10 m from the alignment. Additional stretches of human settlements and agricultural land are observed between 1200 m and 1500 m. On the right side of the alignment, agricultural land and large old trees are present within approximately 600 m. A pond is located between 970–994 m (approximately 24 m), followed by clusters of large old trees, human settlements, and a roadside shop situated at around 1060 m with an offset distance of approximately 2 m. Further along, agricultural land and a pond between 1328–1351 m (approximately 23 m), along with additional human settlements and agricultural areas, are located within the 1 km project influence zone. These features and establishments are of notable religious, cultural, and socio-economic importance to the local community. However, since the proposed sub-project activities will be largely confined within the road alignment, no significant adverse impacts or disturbances to these nearby sensitive

receptors are anticipated. Nevertheless, appropriate precautionary measures and environmental management practices will be implemented during the construction phase to ensure adequate protection of these sensitive 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 the entire alignment from Chainage 0 0m to Chainage 1455m.

Sub-project Location:

Important Features	
ID	335584200
District	Gopalganj
Upazila	Muksudpur
Union	Dig Nogor
WARD	4 No.
Total Chainage	1455m
Proposed Chainage	1455m
Road Type	Village Road
Proposed Intervention Type	Bituminous Carpeting (BC)
Road Starting Point Coordinates	Latitude: 23.30936" N Longitude: 90.00583" E
Road Ending Point Coordinates	Latitude: 23.32992" N Longitude: 89.00203" 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 Gader Vajondi, Baksha Khola villages. Some other villages named Bokshipur, Chandpara, Bade Khanpur within one kilometer.
- ii) No historical sites were found
- iii) Not required to relocate local community.
- iv) Some trees, vegetation and livelihood will be affected.
- v) Very low chance of loss of agricultural land.
- vi) Some Household Boundary made of bamboo and tin may need adjustments.

Section B: Environmental and Social Screening

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

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

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

Several environmentally and socially sensitive establishments, including educational and religious institutions, are located within approximately 1 km of the project area. Along the left side of the road alignment, the surrounding features include agricultural land and pond areas extending from chainage 00–552 m, a pond between 945–970 m (approximately 25 m in length), human settlements, agricultural land, and a mosque located at around 1060 m with a setback distance of approximately 10 m from the alignment. Additional stretches of human settlements and agricultural land are observed between 1200 m and 1500 m. On the right side of the alignment, agricultural land and large old trees are present within approximately 600 m. A pond is located between 970–994 m (approximately 24 m), followed by clusters of large old trees, human settlements, and a roadside shop situated at around 1060 m with an offset distance of approximately 2 m. Further along, agricultural land and a pond between 1328–1351 m (approximately 23 m), along with additional human settlements and agricultural areas, are located within the 1 km project influence zone. These features and establishments are of notable religious, cultural, and socio-economic importance to the local community. However, since the proposed sub-project activities will be largely confined within the road alignment, no significant adverse impacts or disturbances to these nearby sensitive receptors are anticipated. Nevertheless, appropriate precautionary measures and environmental management practices will be implemented during the construction phase to ensure adequate protection of these sensitive locations.

Location of environmental and Social important and sensitive areas:

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

Baseline air quality and noise levels:

Dust:

Ambient air quality data specific to Gopalganj District is not readily available; however, the overall air quality in the district is generally good due to its rural environment, with a significant presence of vegetation and agricultural land. A minor amount of dust is generated by local transportation activities, including motorcycles, auto-rickshaws, tempos, trolleys, van-garis, and bicycles traveling on the existing road network. This dust contributes slightly to localized air pollution in the area.

Construction activities during the dry season, along with the transportation of large quantities of construction materials, may lead to an increase in dust and a rise in the concentration of vehicle-related pollutants. Such impacts may temporarily affect the local population residing and working near the project site. However, these effects are anticipated to be negative but

short-term, site-specific within a confined area, and reversible or manageable through the implementation of appropriate mitigation measures.

Noise:

The baseline noise levels in Gopalganj District are generally low. Noise is primarily generated from daily activities, including the movement of local residents and vehicles. During the construction phase, noise levels may experience a temporary increase due to the operation of construction equipment and the transportation of materials. These noise impacts are expected to be brief, confined to the construction period, and localized.

Baseline soil quality:

The soil in Gopalganj District is predominantly composed of alluvial, sandy, and silty loam formations, typical of the northern floodplain region of Bangladesh. The soils here are generally formed from riverine alluvial deposits and exhibit a range of textures from sandy loam to clay loam. These soils are moderately fertile, supporting a variety of agricultural activities in the surrounding rural areas. The fertile nature of the soil makes it conducive to the cultivation of crops, contributing to the agricultural economy of the region.

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 150 to 450 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 681 μ s/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, heron/egret, crow, common myna 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 occasional vultures, 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. The catchment also supports a varied assemblage of freshwater to slightly brackish fish, including

locally important species such as rohu, catla, snakehead murrel, common carp, shrimp, banded shorputi (barb), royna (local carp), bain (spiny eel), and balia, alongside typical floodplain fauna. 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 ponds, ditches, canal, and palisades, are present along the route.

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)

<p>There is no possibility of stagnant water bodies remained for encouraging mosquito breeding and other disease vectors, during the operation phase.</p>
<p>Likely direct and indirect impacts on economic development in the project areas by the sub-project:</p> <p>Construction or implementation of a road project substantially contributes to the development of the project areas. It surely improves the communication network, reduces the transport time, increases the trade and business in/around the areas, and ensures access to better living conditions with amenities, better educational and job opportunities and health facilities. Thus, the direct and indirect impacts on economic development in the project areas would be enormous by this sub-project.</p>
<p>Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description)</p> <p>No existing drainage channels or surface water bodies found in the project area, therefore, no such effect can be anticipated.</p>
<p>Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description)</p> <p>There are no protected areas in or around project sites, and no known areas of ecological interest.</p>
<p>Activities leading to landslides, slumps, slips and other mass movements in road cuts:</p> <p>The entire sub-project component area is nearly flat, thus no such type of impacts is anticipated.</p>
<p>Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation)</p> <p>No</p>
<p>Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:</p> <p>Improved road communication will definitely increase the traffic/ vehicular movement, which must increase the light and noise pollution, but air pollution effect will not be increased significantly, as the proposed BC road will reduce the pollution generated from dust on the muddy road, especially during the dry season and if the vehicles are maintained in good conditions.</p>

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

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

ESMP for Proposed Community Road: Gadar Vajondi GPS to Baksha Khola road via Golger Munshi house road

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

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

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

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

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

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

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

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		<p>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.</p> <ul style="list-style-type: none"> • If ground or surface water is withdrawn for the use of construction works from outside of the other selected places, adequate approvals from the appropriate authority need to be taken before extraction or setting up bore wells. • Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. • Local community must be consulted before any construction works start. 		
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> • Maintain safety measures during the movement of heavy machinery and equipment. • Proper signage to be displayed at major junctions; and road diversions and closures to be informed well in advance to the local community. • Vehicular movement to be controlled near sensitive locations (e.g., schools, colleges, hospitals, etc.) • Local community will be trained up on traffic management and awareness. 	Contractor	Environmental Consultant of PIU
Construction	Labor Base Camp:	<ul style="list-style-type: none"> • Awareness building session will be undertaken 	Contractor	Social

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Activity	Conflicts with the local residents	<p>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.</p> <ul style="list-style-type: none"> • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation. 		Development Specialist and Gender Specialist of PIU
Construction Activity	Labour related issues and grievances	<ul style="list-style-type: none"> • A separate grievance mechanism for workers has to be established for the work package. • Complaints box (preferably for anonymous reporting) /grievance register will be provided to each construction sites; and will be checked and redressed in weekly manner. • Appropriate notification or training to the workers about the scope and procedure of the grievance 		

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

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

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

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		<p>etc. in sub-project sites will be ensured. Proper Emergency evacuation response plan will exist in sub-project area.</p> <ul style="list-style-type: none"> • 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 		

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Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		the correct methods are being used.		
Construction Activity	Pollution of water bodies	<ul style="list-style-type: none"> • Ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameters include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered (e.g., pond, canal, ditch's side will be protected by palisading, etc.) • The material stockpile sites shall be far away from surface water bodies and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • 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.

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

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

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	<p>traffic accidents. The accidents may also be due to tiredness of drivers.</p> <ul style="list-style-type: none"> Widened road, lack of road safety signage or speed-breakers at crossings/strategic locations and sidewalks, and reckless driving may cause road accidents or traffic injuries. 	<p>at appropriate locations to aware drivers about likely accidents due to over speeding.</p> <ul style="list-style-type: none"> All the lanes, median, sharp bends will be reflectorized to facilitate travelers in the night time. 		
Operation & Maintenance	Noise and vibration disturbances to fauna, and Traffic Safety.	<ul style="list-style-type: none"> Provision to maintain noise and vibration from the operation and maintenance of machinery and equipment by proper monitoring and measures. Provision to take necessary lighting, caution for the works and necessary maintenance should be done in day light. 	UE	District XEN, LGED

Cost of Environmental and Social Enhancement Works in BOQ

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

Cost of Environmental Enhancement Works in BOQ

Sl. No.	Description of item	Quantity	Unit price	Total amount
1.	<p><u>Grass Turfing</u></p> <p>Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)</p>	1,746 Sq.m	@38.15 Tk. Per sqm	66,609.90
2.	<p><u>Dust suppression measures</u></p> <p>Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C</p>	1,455.0m	@ 2.56 BDT	3,724.80
3.	<p><u>Water Supply and Sanitation</u></p> <p>Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge.</p> <p>Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.</p>	2 nos.	@12822.86 per toilet	25,645.72

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Sl. No.	Description of item	Quantity	Unit price	Total amount
4.	<p><u>First Aid Box</u></p> <p>Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.</p>	1 no.	LS @5000 Tk. Per box	5,000.00
5.	<p><u>Drinking Water Facilities</u></p> <p>Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.</p>	1 no.	LS @ Tk. 30,000	30,000.00
6.	<p><u>Traffic Management</u></p> <p>Maintaining traffic management at worksite from time of commencement of contractor's activities to time of completion activities, including ensuring that the road is safe for users, providing a safe working area for those involved in work on trafficked network and minimizing any disruption to smooth flow of traffic (this includes providing necessary barricades, warning signs/lights, guide signs,</p>	1 no.	LS @ Tk. 15,000	15,000.00

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Sl. No.	Description of item	Quantity	Unit price	Total amount
	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.			
7.	<p><u>Personal Protection Equipment for Workers</u></p> <p>Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles</p>	LS	LS @ Tk 30,000	30,000.00
8.	<p><u>Motivation training</u></p> <p>Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.</p>	1 no.	LS @ Tk. 10,000	10,000.00
9.	<p><u>Waste disposal facility</u></p> <p>Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.</p>	LS	@ Tk. 5000	5,000.00

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

Sl. No.	Description of item	Quantity	Unit price	Total amount
10.	<p><u>Water Test (Drinking Water samples)</u></p> <p>Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.</p>	LS	@ Tk. 5000	5,000.00
11.	<p><u>Working labour shed:</u></p> <p>Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.</p>	1 no.	LS @ Tk. 30,000	30,000.00
12.	<p><u>Environmental management</u></p> <p>Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax & VAT). And as per direction of the E.I.C. <u>[One person to be appointed for 8 roads]</u></p>	Each	@ Tk. 35000	35,000.00
Total amount for this Road				260,980.42



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: *Bandbari-Bhai Bhai Bazar Road to Hasua GPS Road.* Date: *31.03.26*
 Road ID: *83551589*
 Place of Consultation:
 Village: *Hasua* Ward No.: *01* Union: *Hasua* Upazila: *Kotalipara.*
 District: *Gopalganj*

Public Consultation Participants List

Sl. No.	Name	Male/Female	Age	Occupation	Village/Address	Mobile No.	Signature
01	Kazi Tanvir	Male	40	Business	Hasua		<i>[Signature]</i>
02	Bablu Kazi	Male	42	Y	Y		<i>[Signature]</i>
03	Ismail Kazi	Male	60	Y	Y		<i>[Signature]</i>
04	Iblu Kazi	Male	32	Store Keeper	Y		<i>[Signature]</i>
05	Kazi Sirajul Haq	Male	83	Teacher	Y		<i>[Signature]</i>
06	Nizamul Das	Male	45	Farmer	Y		<i>[Signature]</i>
07	Ipi	Female	46	Housewife	Y		<i>[Signature]</i>
08	Rekha	Female	40	Y	Y		<i>[Signature]</i>
09	Jakir Molla	Male	55	Ward Member	Y		<i>[Signature]</i>
10	SAIFUL KAMAL	Male	45	FARMER	Y		<i>[Signature]</i>
11	Pradip Halder	Male	40	Head Teacher	Y		<i>[Signature]</i>
12	Kamal Hossen	Male	50	Teacher	Y		<i>[Signature]</i>
13	Anamika Roy	Female	36	Teacher	Nanikel bari		<i>[Signature]</i>
14	Bibeknanda Biswas	Male	44	Y	Y		<i>[Signature]</i>
15	Namita Mandal	Female	37	Teacher	Hasua		<i>[Signature]</i>

[Signatures]
 W/A
 (Foyez Khondokar)
 Sub-Resistant Engineer
 Katalipara
 F.S
 F.S-River

[Signature]
 Md. Abdullah Al Mamun
 District Resident Engineer (DRE)
 RIVER Project
 LGED, Gopalganj.

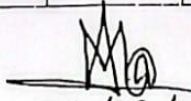
Scanned with
 CamScanner

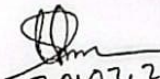
Name of Community Road: Dumuria UPOffice- Pakustia Bazar Road Date: 26 March 2026
 Road ID: 335913006
 Place of Consultation:
 Village: Soto Dumuria Ward No.: 06 Union: Dumuria Upazila: Tungipara
 District: Gopalganj

Public Consultation Participants List

Sl. No.	Name	Male/ Female	Age	Occupation	Village/Address	Mobile No.	Signature
01	Poli Bissas	Female	35	housewife	Dumuria		পলি বিশ্বাস
02	Bonani Bissas	4	36	4	4		বনানী বিশ্বাস
03	Riku Bissas	4	40	4	4		রিকু বিশ্বাস
04	Khircoda Sordar	4	70	4	4		খিরকোদা
05	Bappi Mondol	Male	24	student	4		বাপ্পি
06	Ahmar Talukder	4	27	4	4		আমর
07	Sabbir Talukder	4	22	4	4		সাব্বির
08	Silto Rajon	4	42	Rickbadrder	4		সিল্টো রঞ্জন
09	Sukhen Bissas	4	45	4	4		সুকেন
10	Sotion Mondol	4	55	4	4		সোতন মন্ডল
11	Romani Bissas	4	73	Farmer	4		রোমানী বিশ্বাস
12	Biplop Bissas	4	39	Service holder	4		বিপ্লব

Md. Aurat
 FS-RIVER
 Gopalganj


 30/03/26
 Md. Abdullah Al Mamun
 District Resident Engineer (DRE)
 RIVER Project
 LGED, Gopalganj.


 30.03.26
 Suprata Mozumder
 Assistant Engineer (I)
 LGED, Gopalganj.

