Government of the People's Republic of Bangladesh

Local Government Engineering Department
Local Government Division,
Ministry of Local Government, Rural Development and Cooperatives

Report on
Social and Environmental Screening on Rehabilitation of Rural Roads under the Package: BSTRONG - LGED-CHA/ RD-7

Bangladesh Sustainable Recovery, Emergency Preparedness and Response Project (B-STRONG)

Project Code: P508058

Government of the People's Republic of Bangladesh & World Bank

Acronyms

ARIPA 2017	Acquisition and Requisition of Immovable Property Act, 2017
BC	Bituminous Carpeting (road surface type)
BOQ	Bill of Quantities
B-STRONG	Bangladesh Sustainable Recovery, Emergency Preparedness and Response Project
BSTI	Bangladesh Standards and Testing Institution
C-ESMP	Contractor's Environmental and Social Management Plan
CO	Carbon Monoxide
CPR	Community Property Resource
DC	Deputy Commissioner
DoE	Department of Environment
D&SC / DSC	Design and Supervision Consultant
EC	Electrical Conductivity *(water-quality parameter)*
ECC	Environmental Clearance Certificate
EHS	Environment, Health & Safety
EIA / ESIA	Environmental (and Social) Impact Assessment
EMP / ESMP	Environmental and Social Management Plan
EOI	Expression of Interest
E&S	Environmental and Social
E&S Specialist	Environmental and Social Specialist
ES	Environmental Specialist
ESF	Environmental and Social Framework (World Bank)
ESMF	Environmental and Social Management Framework
ESS	Environmental and Social Standard
FGD	Focus Group Discussion
FSM	Fecal Sludge Management
GBV	Gender-Based Violence
GoB	Government of Bangladesh
GRM	Grievance Redress Mechanism
GRC	Grievance Redress Committee
HBB	Herringbone Brick (road surface type)
HH / HHH	Household / Head of Household
IDA	International Development Association (World Bank)
IEC	Information, Education and Communication
IOL	Inventory of Losses

Acronyms

IP	Indigenous Peoples
KII	Key Informant Interview
LMP	Labor Management Procedures
LGED	Local Government Engineering Department
LS	Lump Sum
MoLGRD&C	Ministry of Local Government, Rural Development and Cooperatives
O&M	Operation and Maintenance
OHS	Occupational Health and Safety
PIU	Project Implementation Unit
PM2.5 / PM10	Particulate Matter equal to or less than 2.5 / 10 micrometers in diameter
PPE	Personal Protective Equipment
PSC	Project Steering Committee
PWD	Public Works Department
QC / QA	Quality Control / Quality Assurance
RAP	Resettlement Action Plan
RCC	Reinforced Cement Concrete
RFP / RPF	Request for Proposal / Resettlement Policy Framework
ROW	Right-of-Way
SEA / SH	Sexual Exploitation and Abuse / Sexual Harassment
SDG	Sustainable Development Goal
SPM	Suspended Particulate Matter
SSO	Social Safeguard Officer
TMP / TCP	Traffic Management Plan / Traffic Control Plan
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
ToR	Terms of Reference
UE / XEN	Upazila Engineer / Executive Engineer
UNO	Upazila Nirbahi Officer
WB	World Bank
WHO	World Health Organization

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1. Background of the Sub-Project

The **Local Government Engineering Department (LGED)**, under the **Ministry of Local Government, Rural Development and Cooperatives (MoLGRD&C),** is implementing the *Bangladesh Sustainable Recovery, Emergency Preparedness and Response Project (B-STRONG)* with financial support from the **World Bank (IDA Credit No. 7786-BD)**. The project is designed to **rehabilitate and enhance the resilience of critical public infrastructure** and to **support flood-affected households in restoring livelihoods** in alignment with the Government of Bangladesh's climate and disaster resilience priorities.

Under Component 1: People-Centric Resilient Infrastructure (allocation: US$173 million), LGED is responsible for the rehabilitation, upgrading, and climate-proofing of rural roads, culverts and associated infrastructure in flood-affected areas. These investments are intended to improve emergency evacuation**,** rural accessibility, and overall disaster preparedness. Within this component, LGED is implementing 68 work packages, with rural and access road interventions forming the project's core physical activities aimed at supporting climate-resilient recovery and inclusive development.

This screening report pertains specifically to Package BSTRONG-LGED-CHA/RD-7, which includes the rehabilitation of approximately 16.60 km of emergency evacuation rural roads:

i. Dewan Hat GC-Tayari Hat GC (Lohagora) Satkania Portion
ii. Uttar Sadaha Mantala Road
iii. Neta Fakir Para (West Side)- Adarsha Gram Road
iv. Nalua-Satkania Road via NaluaHadar Khal Bridge at 1.0 Km & Gatiadanga High School
v. Satkania U.P.-Tayari Hat Bazar GC (Lohagora) road
vi. Eochia chara Embt.Road
vii. Paschim Dhemsha UPC-Chowdhury Hat via Anufakir dokan road
viii. Chib Bari School-Choto Barodona GPS Road (Sha Monsuria Road

located in Satkania Upazila, Chattogram District. These roads function as key local access and emergency-evacuation routes, linking growth centres, bazaars, educational and religious institutions, and union-level service facilities to higher-order district and regional roads, thereby facilitating rapid evacuation and post-disaster relief logistics during severe flood and cyclone events.

Based on field screening and engineering surveys for this package, the road corridors pass through a predominantly rural landscape with a mix of compact roadside settlements and small commercial clusters around local markets, interspersed with agricultural lands (mainly paddy fields and homestead orchards), scattered ponds and beels, and local khals/drainage channels. Land use along the alignments is therefore typical of a mixed rural settlement–agriculture mosaic that is consistent with the existing function of these roads as primary access and evacuation routes for surrounding communities. The screening did not identify any protected forests, nationally designated protected areas, or Ecologically Critical Areas (ECAs) within the immediate corridor of impact for the proposed works.

The screening has been conducted in accordance with the Environmental and Social Management Framework (ESMF)**,** Resettlement Policy Framework (RPF), and the World Bank's Environmental and Social Framework (ESF). As part of this process, LGED carried out detailed environmental and social screening, including site reconnaissance, a census of potentially affected persons, and an Inventory of Losses (IOL) survey. The screening results confirm the following:

- The proposed works will take place entirely within the existing Right-of-Way (ROW);
- No private land acquisition is required;
- No trees, structures, community properties, or other physical assets will be affected;
- No Indigenous Peoples (locally referred to as tribal people) were identified within the sub-project.

Accordingly, the sub-project has been classified as having **Low Environmental and Social Risk**. This report consolidates the screening findings and outlines the necessary mitigation and monitoring measures for implementation, in line with project's ES requirements.

2. Locations of Sub-Projects

Table 1 Locations of Sub-Projects

Package Number	Sub-Project Location / Road Name(s)	Road Length (km)	Box Culverts (Chainage – Size – Coordinates)	Remarks
BSTRONG–LGED–CHA/ RD-7	(i) Dewan hat GC-Tayari Hat GC (lohagara) Satkania Portion, Ch: 1110-4790m (ID: 415822006) (ii) Paschim Dhemsha UPC-Chowdhury Hat Via Anufakir Dokan Road At Ch1600m-3173m (ID: 415823005) (iii) Eochia Chara Embt.Road At Ch.00m-892m (ID:415824032) (iv) Chib Bari School-Choto Barodona GPS Road (Sha Monsuria Road) Ch: 00-1000m (ID: 415824049) (v) Satkania UP- Tayari Hat Bazar GC (Lohagara) Road Ch: 00-4600m (ID:415823004) (vi) Uttar Sadaha Mantala Road by Uniblock at Ch: 1800-2282m (ID: 415824074) (vii) Nalua-Satkania Road Via Naluahadar Khal Bridge at 1.0Km & Gatidanga High School (from Ch: 8Km of Charati-Khodarhat-Noyahat-Bazalia(from RHD#143)) at Ch: 00-3150m (ID: 415822007) (viii) Nata Fakir Para (West Side)- Adarsha Gram Road by Uniblock at Ch: 00-1000m (ID: 415824225)	16.60	**Road ID: Road ID: 415823004** • Ch. **1260 m** – **2.5m×2.5m** (22.1284, 92.0392) • Ch. **1731 m** – **2.5m×2.5m** (22.1265, 92.0431) • Ch. **1835 m** – **2.5m×2.5m** (22.1261, 92.0440) • Ch. **2539 m** – **2.5m×2.5m** (22.1228, 92.0485) • Ch. **3214 m** – **2.5m×2.5m** (22.1197, 92.0531) • Ch. **2128 m-2.5m×2.5m** (22.1246, 92.0459) • Ch. **3790 m** – **1m×1m** (22.1165, 92.0562) **Road ID: 415824049** Ch. **690 m** – **2m×2m** (22.1082, 92.01548) **Road ID: 415823005** • Ch. **2412 m** – **1m×1m** (22.1054, 92.0518) • Ch. **2330 m** – **1m×1m** (22.1054, 92.0518) **Road ID: 415824032** • Ch. 695 **m** – **1m×1m** (22.0831,92.99473) • Ch. 784 **m** – **1m×1m** (22.0826, 91.99535)	Satkania Upazila

3. Map of Project Locations

The figure shows the eight rural road sections proposed under B-STRONG in Satkania Upazila, their start- and end-chainages, and their linkage with the union parishad headquarters within Satkania Upazila.

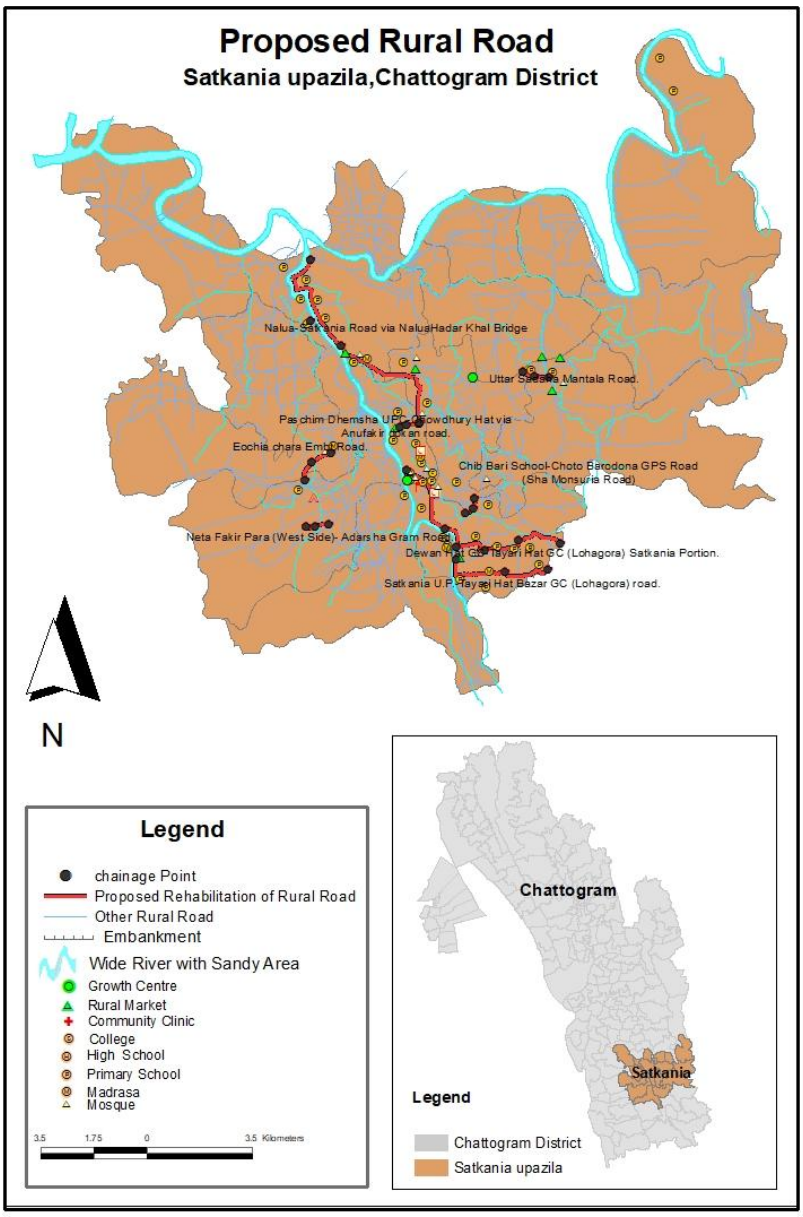

Figure 1 Location of Proposed Rural Roads in Satkania Upazila

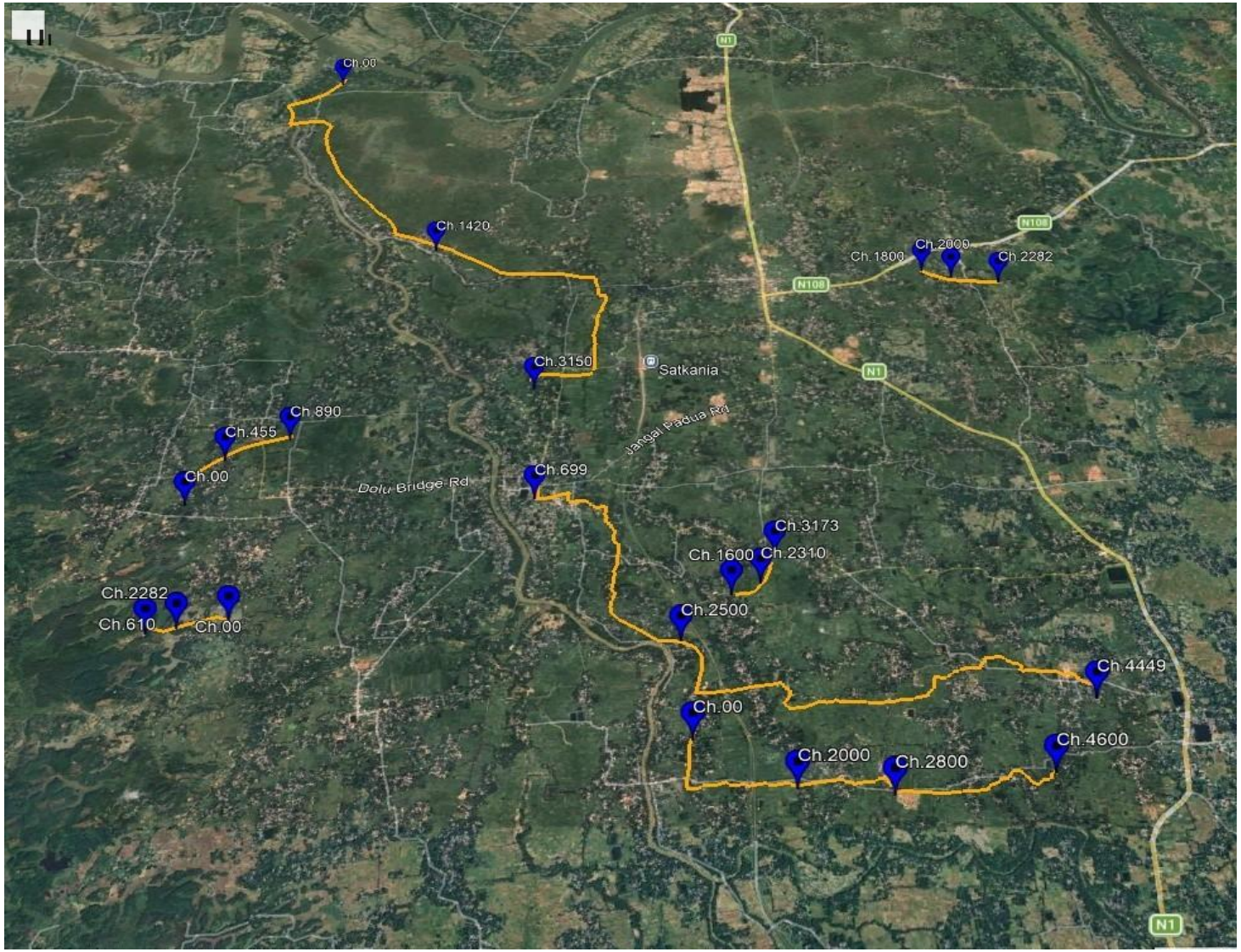

Figure 2 Map of sub-project location under BSTRONG_CHA/ RD-7

4. Description of Key Project Activities and Construction Arrangements

The sub-project involves rehabilitation and climate-resilient improvement of LGED rural roads within the existing Right-of-Way (ROW). The works are designed to improve all-weather accessibility, drainage, and road safety without requiring any new land acquisition or major geometric realignment, except for minor adjustments within the existing corridor where necessary for safety and drainage.

4.1 Main project activities

The main civil works under this package include:

- Pavement rehabilitation and localized widening of the existing carriageway where required to achieve the design width and improve surface condition;
- Shoulder improvement and slope protection, including strengthening and reshaping of embankment shoulders and turfing and/or plantation on side slopes to reduce erosion;
- Improvement of roadside drainage, including cleaning and re-sectioning of existing side-drains, provision of new side-drains where necessary, and improvement of outfalls to nearby khals and low-lying areas;
- Construction, rehabilitation, or replacement of culvert structures at critical drainage crossings (including the proposed box culverts), with associated approach works and protection;
- Minor geometric improvements/realignments within the existing ROW, where needed to improve visibility, horizontal alignment and safety at sharp curves or junctions; and
- Road safety and ancillary works, including road signs, pavement markings, speed humps, guardrails/barriers near schools, markets and sharp curves, and access ramps for adjacent homesteads and shops.

These activities are consistent with the engineering design and the ESMP measures presented in Annex-3 and Annex-4.

Table 2: Table of Bridges and Culvert under Package BSTRONG–LGED–CHA/ RD-7

(i) Dewan hat GC-Tayari Hat GC (lohagara) Satkania Portion, Ch: 1110-4790m (ID: 415822006)

SL. No	Type of Existing /proposed	Bridge/culvert/gap	Chainage (km)	Length (m)	Construction Year	**Condition of Existing STR**	**Remarks**
1	Existing	U-Drain	4.276	1.00	1993	Poor	

(ii) Paschim Dhemsha UPC- Chowdhury Hat Via Anufakir Dokan Road at Ch1600m-3173m (ID: 415823005)

SL. No	Type of Existing/ proposed	Bridge/culvert/gap	Chainage (km)	Length (m)	Construction Year	**Condition of Existing STR**	**Remarks**
1	Existing	RCC Box Culvert	2.330	3.00	1988	Poor	**Opening Inadequate**

2	Existing	RCC Box Culvert	2.412	1.00	1998	Poor	

(iii) Eochia Chara Embt.Road at Ch.00m-892m (ID:415824032)

SL. No	Type of Existing/ proposed	Bridge/culvert/gap	Chainage (km)	Length (m)	Construction Year	**Condition of Existing STR**	**Remarks**
1	Existing	RCC Box Culvert	0.695	1.00	1990	Poor Pipe Culvert	**Opening Inadequate**
	Existing	RCC Box Culvert	0.784	1.00	New	GAP	

(iv) Chib Bari School-Choto Barodona GPS Road (Sha Monsuria Road) Ch: 00-1000m (ID: 415824049)

SL. No	Type of Existing/ proposed	Bridge/culvert/gap	Chainage (km)	Length (m)	Construction Year	**Condition of Existing STR**	**Remarks**
01	Existing	RCC Box Culvert	0.690	2.50	1993	Poor	

(v) Satkania UP- Tayari Hat Bazar GC (Lohagara) Road Ch: 00-4600m (ID:415823004)

SL. No	Type of Existing/ proposed	Bridge/culvert/gap	Chainage (km)	Length (m)	Construction Year	**Condition of Existing STR**	**Remarks**
1	Existing	RCC Box Culvert	1.260	2.50	2008	Poor	**Opening Inadequate**
2	Existing	RCC Box Culvert	1.731	2.50	1993	Poor	
3	Existing	RCC Box Culvert	1.835	2.50	1995	Poor	**Opening Inadequate**
4	Existing	RCC Box Culvert	2.128	2.50	1999	Poor	
5	Existing	RCC Box Culvert	2.539	2.50	1999	Poor	
6	proposed	U-Drain	2.648	1.00	New		
7	proposed	U-Drain	2.839	1.00	New		
8	proposed	U-Drain	3.167	1.00	New		
9	Existing	RCC Box Culvert	3.214	2.50	1989	Poor	
10	Existing	RCC Box Culvert	3.790	1.50	1987	Poor	**Opening Inadequate**

(vi) Uttar Sadaha Mantala Road by Uniblock at Ch: 1800-2282m (ID: 415824074)

SL. No	Type of Existing/ proposed	Bridge/culvert/gap	Chainage (km)	Length (m)	Construction Year	**Condition of Existing STR**	**Remarks**
1	Proposed	RCC Box Culvert	1.680	1.00	New	GAP	

(vii) Nalua-Satkania Road Via Naluahadar Khal Bridge at 1.0Km & Gatidanga High School (from Ch: 8Km of Charati-Khodarhat-Noyahat-Bazalia(from RHD#143)) at Ch: 00-3150m (ID: 415822007)

SL. No	Type of Existing/ proposed	Bridge/culvert/gap	Chainage (km)	Length (m)	Construction Year	**Condition of Existing STR**	**Remarks**
1	Existing	RCC Box Culvert	0.140	1.00	1987	Poor Pipe Culvert	
2	Proposed	RCC Box Culvert	0.600	1.00	new	GAP	
3	Proposed	RCC Box Culvert	0.657	1.00	new	GAP	
4	Proposed	RCC Box Culvert	0.688	1.00	new	GAP	
5	Proposed	RCC Box Culvert	0.824	1.00	new	GAP	

(viii) Nata Fakir Para (West Side)- Adarsha Gram Road by Uniblock at Ch: 00-1000m (ID: 415824225)

SL. No	Type of Existing/ proposed	Bridge/culvert/gap	Chainage (km)	Length (m)	Construction Year	**Condition of Existing STR**	**Remarks**
1	Proposed	RCC Box Culvert	2.200	1.00	New	GAP	

4.2 Construction methods and sequence

The construction will follow standard LGED practices for rural road rehabilitation, using conventional equipment and methods. In broad terms, the sequence of works will be as follows:

(a) Pre-construction and site preparation

- Mobilization of contractor personnel, equipment and materials;
- Establishment of site office, construction yard and any small labor sheds/camps at approved locations;
- Setting out and chainage marking along the existing alignment;
- Installation of information boards, safety signage and initial traffic-management measures.

(b) Earthworks and Road improvement

- Scarifying and trimming of the existing surface where required;
- Compaction of road and shoulders in layers using rollers or other appropriate equipment;

- Turfing and/or planting of grasses and shrubs on exposed slopes to reduce erosion.

(c) Pavement works (rigid/bituminous pavement as per design)

- Preparation of subgrade, including proof-rolling and localized improvement of weak spots;
- Placement and compaction of sub-base and base-course materials;
- Construction of rigid pavement and/or bituminous surfacing (as per design), including mixing, laying, compaction and curing in accordance with LGED specifications;
- Construction and finishing of shoulders flush with, or slightly lower than, the carriageway surface.

(d)Drainage and minor works

- Cleaning and re-sectioning of existing side-drains (if any) and clearing of existing cross-drainage openings to ensure unobstructed water flow and restore design capacity;
- General maintenance of existing small drainage points to prevent waterlogging on the road surface during the construction period;
- Protection of road embankment slopes against erosion using turfing, plantation, or other bio-engineering measures as specified in the design.

4.3 Temporary construction facilities

During implementation, the Contractor will require temporary facilities such as:

- A construction yard and stockyards for storage of aggregates, sand, cement, reinforcing steel, bitumen and pre-cast elements;
- Material storage areas for short-term stockpiling of excavated earth, topsoil and construction materials along the corridor, within the ROW at suitable locations; and
- Labor sheds/camps (if required) for housing a portion of the workforce, with basic water supply, sanitation and waste-management facilities.

These temporary facilities will:

- Be located on land approved by LGED, preferably on government land or land rented/leased from private owners through documented, voluntary agreements;
- Be sited away from schools, health facilities, dense residential clusters and drainage paths as far as practicable, to minimize nuisance, safety risks and waterlogging; and
- Be managed in accordance with the ESMP and the Contractor's ESMP (C-ESMP), including provisions on waste management, drainage, sanitation, occupational health and safety, GBV/SEA/SH prevention, and community safety.

All temporary sites will be dismantled and restored to their previous or agreed condition after completion of works and demobilization.

4.4 Major construction materials and sourcing

The main construction materials required for the works will include:

- Sand for filling, bedding, mortar and concrete;
- Aggregates (brick and/or stone) for sub-base, base and concrete;
- Selected earth or borrow material (if needed) for road strengthening and shoulder works;
- Cement and reinforcing steel for culverts and any rigid pavement;
- Bitumen and bituminous mixes for surfacing; and
- Miscellaneous materials such as bricks, geotextile, pipes, signposts and guardrails.

Based on the engineering design and Bill of Quantities (BOQ), the package will require the typical volumes of sand, aggregates, bitumen and selected earth associated with in-ROW rehabilitation of approximately 16.60km of rural roads and associated drainage structures. An indicative summary of the major material quantities is provided in the civil works BOQ for this package, which forms part of the bidding and contract documents and will guide construction planning and environmental management.

The exact material quantities will be as per the approved BOQ and may be fine-tuned during detailed construction scheduling. All sand, aggregates and other quarried materials will be sourced only from authorized locations with valid environmental clearance and relevant permits and licenses issued by the competent authorities and will be transported in covered vehicles to minimize dust and spillage. Use of unauthorized borrow areas or quarries will not be permitted under the contract.

Table 3: Required Construction Materials for Road Rehabilitation

(i) Dewan hat GC-Tayari Hat GC (lohagara) Satkania Portion, Ch: 1110-4790m (ID: 415822006)

SL. No	Name of Materials	Unit	Total Quantity (As per BOQ)	Remarks/Source
1	Sand (FM 0.8 - 1.2)	Cum	899.205	Local Quarry
2	Aggregates (Stone chips)	Cum	460.00	Approved Supplier
3	Aggregates (Brick chips)	Cum	2010.985	Approved Supplier
4	Bitumen	Ton/ MT	64.809	Approved Refinery
5	Earth Work (Borrow Material)	Cum	71953.00	Local identified pits

(ii) Paschim Dhemsha UPC- Chowdhury Hat Via Anufakir Dokan Road at Ch1600m-3173m (ID: 415823005)

SL. No	Name of Materials	Unit	Total Quantity (As per BOQ)	Remarks/Source
1	Sand (FM 0.8 - 1.2)	Cum	466.065	Local Quarry
2	Aggregates (Stone chips)	Cum	392.00	Approved Supplier
3	Aggregates (Brick chips)	Cum	346.465	Approved Supplier
4	Bitumen	Ton/ MT	31.30	Approved Refinery
5	Uni-Block	sqm	351.50	
6	Earth Work (Borrow Material)	Cum	2692.00	Local identified pits

(iii) Eochia Chara Embt. Road at Ch.00m-892m (ID:415824032)

SL. No	Name of Materials	Unit	Total Quantity (As per BOQ)	Remarks/Source
1	Sand (FM 0.8 - 1.2)	Cum	1130.50	Local Quarry
2	Aggregates (Stone chips)	Cum	124.00	Approved Supplier
3	Aggregates (Brick chips)	Cum	784.70	Approved Supplier
4	Bitumen	Ton/ MT	10.30	Approved Refinery
5	Earth Work (Borrow Material)	Cum	2392.00	Local identified pits

(iv) Chib Bari School-Choto Barodona GPS Road (Sha Monsuria Road) Ch: 00-1000m (ID: 415824049)

SL. No	Name of Materials	Unit	Total Quantity (As per BOQ)	Remarks/Source
1	Sand (FM 0.8 - 1.2)	Cum	682.955	Local Quarry
2	Aggregates (Stone chips)	Cum	30.00	Approved Supplier
3	Aggregates (Brick chips)	Cum	406.315	Approved Supplier
4	Uni-Block	sqm	1994.00	Approved Refinery
5	Earth Work (Borrow Material)	Cum	1580.00	Local identified pits

(v) Satkania UP- Tayari Hat Bazar GC (Lohagara) Road Ch: 00-4600m (ID:415823004)

SL. No	Name of Materials	Unit	Total Quantity (As per BOQ)	Remarks/Source
1	Sand (FM 0.8 - 1.2)	Cum	2155.51	Local Quarry
2	Aggregates (Stone chips)	Cum	1335.00	Approved Supplier
3	Aggregates (Brick chips)	Cum	2017.00	Approved Supplier
4	Bitumen	Ton/ MT	104.20	Approved Refinery
5	Earth Work (Borrow Material)	Cum	7149.00	Local identified pits

(vi) Uttar Sadaha Mantala Road by Uniblock at Ch: 1800-2282m (ID: 415824074)

SL. No	Name of Materials	Unit	Total Quantity (As per BOQ)	Remarks/Source
1	Sand (FM 0.8 - 1.2)	Cum	632.78	Local Quarry
2	Aggregates (Stone chips)	Cum	10.00	Approved Supplier
3	Aggregates (Brick chips)	Cum	437.00	Approved Supplier
4	Uni-Block	sqm	1465	Approved Refinery
5	Earth Work (Borrow Material)	Cum	742.00	Local identified pits

(vii) Nalua-Satkania Road Via Naluahadar Khal Bridge at 1.0Km & Gatidanga High School (from Ch: 8Km of Charati-Khodarhat-Noyahat-Bazalia(from RHD#143)) at Ch: 00-3150m (ID: 415822007)

SL. No	Name of Materials	Unit	Total Quantity (As per BOQ)	Remarks/Source
1	Sand (FM 0.8 - 1.2)	Cum	1609.30	Local Quarry
2	Aggregates (Stone chips)	Cum	800.00	Approved Supplier
3	Aggregates (Brick chips)	Cum	1439.06	Approved Supplier
4	Bitumen	Ton/ MT	63.30	Approved Refinery
5	Earth Work (Borrow Material)	Cum	4484.00	Local identified pits

(viii) Nata Fakir Para (West Side)- Adarsha Gram Road by Uniblock at Ch: 00-1000m (ID: 415824225)

SL. No	Name of Materials	Unit	Total Quantity (As per BOQ)	Remarks/Source
1	Sand (FM 0.8 - 1.2)	Cum	1440.39	Local Quarry
2	Aggregates (Stone chips)	Cum	46.00	Approved Supplier
3	Aggregates (Brick chips)	Cum	931.00	Approved Supplier
4	Uni-Block	sqm	3030.00	Approved Refinery
5	Earth Work (Borrow Material)	Cum	1750.00	Local identified pits

4.5 Indicative work schedule

The civil works will be implemented over the construction period specified in the contract (expected to be approximately 18 months, as noted in the sub-project screening form). For environmental and social management purposes, the schedule can be grouped into the following broad phases:

- **Phase 1 – Pre-construction and mobilization**: Finalization and approval of the Contractor's ESMP (including General Site Facilities, traffic management, OHS, waste management and Environmental Mitigation, Execution of earthworks and Drainage Structure re-construction), mobilization of resources, establishment of temporary facilities, and disclosure of work plans and GRM contacts to local stakeholders.
- **Phase 2 – Main construction works**: Pavement rehabilitation/widening, drainage improvement, and road reconstruction, with appropriate phasing to maintain local access and traffic flow and to avoid peak monsoon periods for critical drainage and in-stream works where practicable.
- **Phase 3 – Finishing works and demobilization**: Road surfacing, completion of road-safety and final turfing/plantation, dismantling of temporary facilities, site clean-up and restoration, and rectification of any defects identified during inspections.

Table 4: Tentative Implementation Schedule and Construction Phases

(i) Dewan hat GC-Tayari Hat GC (lohagara) Satkania Portion, Ch: 1110-4790m (ID: 415822006)

Phase	Description of Activities	Indicative Start Date	Indicative End Date
Phase 1	Pre-Construction (Site survey, mobilization, labor shed setup)	October 2025	February 2026
Phase 2	Main Construction (Earthwork, sub-base, and pavement work)	March 2025	October2026
Phase 3	Post-Construction (Site clearing, tree plantation, and finishing)	November 2026	July 2027

(ii) Paschim Dhemsha UPC- Chowdhury Hat Via Anufakir Dokan Road at Ch1600m-3173m (ID: 415823005)

Phase	Description of Activities	Indicative Start Date	Indicative End Date
Phase 1	Pre-Construction (Site survey, mobilization, labor shed setup)	October 2025	February 2026
Phase 2	Main Construction (Earthwork, sub-base, and pavement work)	March 2025	October2026
Phase 3	Post-Construction (Site clearing, tree plantation, and finishing)	November 2026	July 2027

(iii) Eochia Chara Embt.Road at Ch.00m-892m (ID:415824032)

Phase	Description of Activities	Indicative Start Date	Indicative End Date
Phase 1	Pre-Construction (Site survey, mobilization, labor shed setup)	October 2025	February 2026
Phase 2	Main Construction (Earthwork, sub-base, and pavement work)	March 2025	October2026
Phase 3	Post-Construction (Site clearing, tree plantation, and finishing)	November 2026	July 2027

(iv) Chib Bari School-Choto Barodona GPS Road (Sha Monsuria Road) Ch: 00-1000m (ID: 415824049)

Phase	Description of Activities	Indicative Start Date	Indicative End Date
Phase 1	Pre-Construction (Site survey, mobilization, labor shed setup)	October 2025	February 2026
Phase 2	Main Construction (Earthwork, sub-base, and pavement work)	March 2025	October2026
Phase 3	Post-Construction (Site clearing, tree plantation, and finishing)	November 2026	July 2027

(v) Satkania UP- Tayari Hat Bazar GC (Lohagara) Road Ch: 00-4600m (ID:415823004)

Phase	Description of Activities	Indicative Start Date	Indicative End Date
Phase 1	Pre-Construction (Site survey, mobilization, labor shed setup)	October 2025	February 2026
Phase 2	Main Construction (Earthwork, sub-base, and pavement work)	March 2025	October2026
Phase 3	Post-Construction (Site clearing, tree plantation, and finishing)	November 2026	July 2027

(vi) Uttar Sadaha Mantala Road by Uniblock at Ch: 1800-2282m (ID: 415824074)

Phase	Description of Activities	Indicative Start Date	Indicative End Date
Phase 1	Pre-Construction (Site survey, mobilization, labor shed setup)	October 2025	February 2026
Phase 2	Main Construction (Earthwork, sub-base, and pavement work)	March 2025	October2026
Phase 3	Post-Construction (Site clearing, tree plantation, and finishing)	November 2026	July 2027

(vii) Nalua-Satkania Road Via Naluahadar Khal Bridge at 1.0Km & Gatidanga High School (from Ch: 8Km of Charati-Khodarhat-Noyahat-Bazalia(from RHD#143)) at Ch: 00-3150m (ID: 415822007)

Phase	Description of Activities	Indicative Start Date	Indicative End Date
Phase 1	Pre-Construction (Site survey, mobilization, labor shed setup)	October 2025	February 2026
Phase 2	Main Construction (Earthwork, sub-base, and pavement work)	March 2025	October2026
Phase 3	Post-Construction (Site clearing, tree plantation, and finishing)	November 2026	July 2027

(viii) Nata Fakir Para (West Side)- Adarsha Gram Road by Uniblock at Ch: 00-1000m (ID: 415824225)

Phase	Description of Activities	Indicative Start Date	Indicative End Date
Phase 1	Pre-Construction (Site survey, mobilization, labor shed setup)	October 2025	February 2026
Phase 2	Main Construction (Earthwork, sub-base, and pavement work)	March 2025	October2026
Phase 3	Post-Construction (Site clearing, tree plantation, and finishing)	November 2026	July 2027

The detailed, time-bound work schedule for these phases will be provided in the Contractor's work programme and C-ESMP and updated as required during implementation, in consultation with LGED and local stakeholders.

5. Regulatory Framework and Applicability of Environmental and Social Standards

5.1 National environmental and social regulatory framework

The sub-project will be implemented in compliance with the applicable national environmental and social legislation and regulations of Bangladesh, including but not limited to:

- **Environment Conservation Rules (ECR), 2023** – the updated implementing rules under ECA, which classify projects and industrial units into Green, Yellow, Orange and Red categories and set out the procedures for Site Clearance and Environmental Clearance Certificate (ECC), as well as standards for emissions, effluents and noise. Road and bridge projects are included within the transport infrastructure category of these Rules and are subject to environmental clearance according to their category.
- **Noise Pollution (Control) Rules, 2006** – which prescribe permissible noise limits for different land-use zones (residential, mixed, commercial, silent, etc.) and regulate the use of loudspeakers and noise-generating equipment, including during construction.
- **Acquisition and Requisition of Immovable Property Act (ARIPA), 2017** – which sets out the legal procedures, valuation methods and institutional responsibilities for acquisition and requisition of private land and attached assets for public purposes, including consultation and compensation requirements. Although no land acquisition is required for this sub-project, any future need for temporary requisition or additional land would follow ARIPA 2017 and the project's RPF.
- **Bangladesh Labour Act, 2006 (as amended in 2013 and 2018) and Bangladesh Labour Rules, 2015** – which regulate employment conditions, wages, working hours, use of child and adolescent labor, occupational health and safety (OHS), workers' welfare and labor relations in Bangladesh. These provisions apply to all contractors and subcontractors engaged in the works and are complemented by the project's Labor Management Procedures (LMP) and workers' Code of Conduct.
- Other relevant laws, regulations and standards, including provisions related to road safety, motor-vehicle emissions, construction safety, and local government responsibilities, will also be observed during implementation.

For this sub-project, LGED will ensure that:

- All works remain within the existing government Right-of-Way (ROW) and avoid any acquisition of private land;
- National environmental requirements on air quality, noise, waste management and water protection are adhered to through the ESMP and Contractor's ESMP (C-ESMP);
- Labor and OHS provisions under national law and the LMP (e.g., prohibition of child labor, working-hour limits, minimum wages, use of PPE, accident reporting) are fully implemented and monitored; and
- ARIPA 2017 procedures and the B-STRONG RPF are followed if any unanticipated land or livelihood impacts are identified during implementation.

5.2 Environmental categorization and Environmental Clearance under ECR 2023

Under the Environment Conservation Rules (ECR), 2023, infrastructure projects are categorized based on their scale and impact. For the B-STRONG project as a whole, LGED has already initiated the environmental clearance process with the Department of Environment (DoE).

In response to the application for the entire project, the DoE (via Memo No: 22.02.0000.018.18.001.21.63, dated 25/01/2026) has requested detailed information regarding the specific locations of shelters, the exact lengths of individual roads and bridges, and other technical specifications to determine the final environmental category and the requirement for an Environmental Clearance Certificate (ECC).

Accordingly, for the RD-7 package:

- This sub-project is part of the overall B-STRONG project application currently under review by the DoE.
- This submission addresses the DoE's requirement to facilitate the overall project-level clearance, which will also provide legal coverage for this specific (RD-7,16.60 km) rehabilitation package.
- No civil works for RD-7 will commence until the formal Environmental Clearance Certificate (ECC) or a "No Objection" / exemption has been secured from the DoE, and any conditions set by the DoE will be strictly incorporated into the Contractor's ESMP (C-ESMP).

If there are any design changes or additions that alter the overall scope or length of the package, LGED will inform the DoE and, where necessary, update the clearance application or seek amendment to the ECC.

5.3 Applicability of World Bank Environmental and Social Standards (ESS)

The B-STRONG Project is being implemented under the World Bank's Environmental and Social Framework (ESF). The applicability of the World Bank's Environmental and Social Standards (ESS) to this sub-project is summarized below, in line with the project ESMF. A more detailed narrative assessment of impacts and ESS alignment is provided in Section 12 of this report.

Table 3 Applicability of World Bank Environmental and Social Standards (ESS) to the sub-project

ESS No.	Standard title	Applicable?	Rationale for applicability / non-applicability
ESS1	Assessment and Management of Environmental and Social Risks and Impacts	Yes	The sub-project involves civil works (road and culvert rehabilitation) with site-specific environmental and social risks during construction and operation. Screening, this report, and the ESMP have been prepared in line with ESS1 and the B-STRONG ESMF to assess and manage these risks.

ESS2	Labor and Working Conditions	Yes	The works will be implemented by contractors employing local and (in limited numbers) external workers. ESS2 is applicable to manage labor conditions, OHS risks, workers' accommodation, grievance mechanisms for workers, and enforcement of the workers' Code of Conduct in conjunction with national labor laws and the project LMP.
ESS3	Resource Efficiency and Pollution Prevention and Management	Yes	The sub-project will use construction materials (aggregates, sand, cement, bitumen, steel) and water, and will generate dust, noise, solid waste and small quantities of hazardous waste (e.g., oils, lubricants). ESS3 is applicable for managing resource efficiency and pollution prevention through good-practice construction, waste management and spill-prevention measures included in the ESMP/C-ESMP.
ESS4	Community Health and Safety	Yes	Construction and operation will take place adjacent to settlements, schools, mosques and markets, and will temporarily increase traffic and safety risks for road users and nearby residents. ESS4 is applicable for managing community health and safety, including traffic management, road-safety features, construction-site safety, emergency response and contextual risks of GBV/SEA/SH.
ESS5	Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Yes (framework)	The current design confirms that all works remain within the existing LGED ROW, with no land acquisition or displacement expected. However, ESS5 is considered applicable at framework level for B-STRONG. Any unanticipated land or livelihood impacts (e.g., temporary rental of private land for construction yards, or access disruptions) will be addressed in line with the project RPF and ESMF.
ESS6	Biodiversity Conservation and Sustainable Management of Living Natural Resources	Yes	The works are located in a modified rural landscape within the Sangu River basin and the alluvial plains of Satkania, which are characterized by extensive floodplain ecosystems and local water bodies (khals and ponds) that support local biodiversity. ESS6 is applicable to ensure that construction activities near these khals, ponds, and local drainage channels such as the Dalu Khal and its tributaries do not adversely affect aquatic habitats through siltation or pollution. Furthermore, any trees or vegetation within the Right-of-Way (RoW) that may be impacted will be managed through strict avoidance where possible and compensatory planting measures (focusing on local and indigenous species) as detailed in the Satkania-specific ESMP.
ESS7	Indigenous Peoples/Sub-	No	Screening and consultations confirmed that no Indigenous Peoples (tribal communities) reside in or use

	Saharan African Historically Underserved Traditional Local Communities		the sub-project area. ESS7 is therefore not considered applicable. If new information on the presence of such communities arises during implementation, the sub-project will be re-screened and ESS7 requirements applied as appropriate.
ESS8	Cultural Heritage	Yes	No listed archaeological or nationally protected heritage sites fall within the project footprint; however, community cultural and religious structures (mosques, temples, graveyards) are present near the road and will remain unaffected. ESS8 is applicable due to the potential for chance finds during excavation; a chance-find procedure will be followed in accordance with the ESMF.
ESS9	Financial Intermediaries	No	ESS9 is not relevant because the sub-project is implemented directly by LGED under B-STRONG and does not involve financial intermediaries.
ESS10	Stakeholder Engagement and Information Disclosure	Yes	ESS10 is applicable because the sub-project requires ongoing engagement with local communities, road users and other stakeholders. Stakeholder consultations have already been conducted, and the project has an established Stakeholder Engagement Plan (SEP) and Grievance Redress Mechanism (GRM) that will operate throughout implementation.

The above framework confirms that the sub-project's environmental and social risks are limited, site-specific and manageable through the ESMP, C-ESMP and compliance with national regulations and the relevant ESS (ESS1, ESS2, ESS3, ESS4, ESS5, ESS6, ESS8 and ESS10)

6. Methodology

To assess the potential environmental and social impacts of the proposed interventions under Package BSTRONG–LGED–CHA/ RD-7, a field-based screening was conducted by a multidisciplinary team in line with the procedures outlined in the B-STRONG ESMF, RPF, and the World Bank's ESF.

The screening team comprised Social and Environmental Specialists from LGED and the assigned Design and Supervision Consultant (DSC). Technical assistance and coordination support were provided by the Social Development Specialist and the Field-Level Environmental Specialist of the Project Implementation Unit (PIU).

The methodology included both quantitative and qualitative approaches:

- A structured questionnaire, aligned with the ESMF, was used to collect primary data on:
  - Population and household characteristics;
  - Land ownership and land-use patterns;
  - Any requirement for land acquisition or physical/economic displacement;
  - Potential loss of assets such as trees, structures, or community properties.
- A Focus Group Discussion (FGD) was conducted with local stakeholders, including road users, community members, small traders, women representatives, and Union Parishad officials. The objective was to gather community perspectives on the sub-project's anticipated benefits, risks, and suggestions for mitigation during construction.
- In addition to the FGD, the team conducted informal discussions and key informant interviews (KIIs) with local leaders and knowledgeable residents to understand site-specific issues such as seasonal flood behavior, drainage bottlenecks, or traffic safety concerns.
- Site visits were carried out along the full alignment to observe local conditions. Field notes, photographs, and GPS points were recorded to verify environmental sensitivity, settlement proximity, and any potential risks to nearby receptors (e.g., schools, mosques, markets).

This inclusive and participatory methodology ensured that both environmental and social aspects were rigorously assessed and that the screening process informed accurate risk classification and appropriate mitigation planning for the sub-project.

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7. Summary of Key Findings

The proposed sub-project is anticipated to generate an overall positive environmental and social impact. The intervention will significantly enhance emergency evacuation capacity, rural accessibility, and connectivity to essential services for flood-prone communities in Satkania Upazila, Chattogram District.

The screening confirmed that:

- The works will be implemented entirely on government land, with no land acquisition required;
- No trees, structures, community assets, or privately owned resources will be affected;

- No Indigenous Peoples (tribal communities) were identified;
- No squatters, encroachers, or informal vendors will be impacted.

Consultations revealed strong community support for the sub-project, especially in terms of improved flood preparedness and uninterrupted rural access.

Potential environmental impacts such as dust, noise, temporary waste generation, and traffic disturbances are expected during construction but are considered minor and temporary. These can be effectively managed through standard good practices outlined in the Environmental and Social Management Plan (ESMP).

If any design modification or alignment change occurs during implementation, or if new environmental or social impacts are identified, appropriate mitigation and compensation measures will be implemented in accordance with the Resettlement Policy Framework (RPF) and ESMF of the B-STRONG.

Based on the screening results, the sub-project has been classified as having Low Environmental and Social Risk, with no significant, cumulative, or irreversible impacts anticipated. The sub-project is therefore considered suitable for implementation under the B-STRONG.

7.1 Existing Scenario of Proposed Roads

The sub-project does not involve any land acquisition or physical displacement, as all proposed works will be implemented within the existing LGED Right-of-Way (ROW). The road sections were identified in consultation with the Upazila Engineer (UE), LGED, Satkania, and subsequently validated through joint field visits by the Project Implementation Unit (PIU) and the environmental and social specialists. The selection prioritized segments that are critical for emergency evacuation and for maintaining connectivity in flood-prone areas.

During social and environmental screening, the entire alignment within the existing carriageway width was found to be free of encroachments and permanent private or community structures that would require relocation or demolition. No loss of titled land, trees, or other physical assets within the ROW is anticipated under the proposed scope of works. Consequently, no land acquisition or physical displacement is expected.

However, a number of important environmental features (IEFs) and local hotspots such as schools, mosques, temples, markets, ponds, khals, forest patches and roadside tree rows are located along and in the vicinity of the proposed alignments. While these receptors are outside the permanent footprint of construction, they may be exposed to temporary impacts during implementation, including dust and noise nuisance, short-term access restrictions, construction traffic, and localized disturbance of adjacent land.

These IEFs and hotspots have been mapped by chainage during the field survey and are summarized. This inventory will be used to (i) plan work sequencing in sensitive stretches, (ii) design and implement site-specific Traffic Management Plan (TMP) and community safety measures, and (iii) ensure that any unexpected temporary impacts such as access disruption, minor damage to adjacent areas, or short-term disturbance near sensitive receptors are addressed through appropriate mitigation measures under the Project's RPF and ESMF and incorporated into the Contractor's C-ESMP.

Road ID: 415822006– Dewan Hat GC-Tayari Hat GC (Lohagora) Satkania Portion , Satkania-Chattogram

Chainage (from N/E/W/S)	IEFs	Road Side	Comments
697 m	Start of Satkania Segment	L	At about 30 m from Ch 697 m
697 – 2500 m	Pond	L	Located at about 30 m from the centerline
697 – 2500 m	Madrasa	R	Located at about 50 m from the centerline
697 – 2500 m	School	L	Located at about 10 m from the centerline
697 – 2500 m	Mosque	R	Located at about 70 m from the centerline
697 – 2500 m	Bazar	L	Located at about 10 m from the centerline
2500 m	Pond	L	At about 25 m from Ch 2500 m
2500 – 4449 m	Mosque	L	Located at about 40 m from the centerline
2500 – 4449 m	Pond	R	Located at about 15 m from the centerline
2500 – 4449 m	Madrasa	L	Located at about 20 m from the centerline
2500 – 4449 m	Bazar	L	Located at about 50 m from the centerline
2500 – 4449 m	UP Office	R	Located at about 8025 m from the centerline
2500 – 4449 m	Pond	L	Located at about 10 m from the centerline
4449 m	Mosque	L	At about 40 m from Ch 4449 m

Road ID: 415823004 – Satkania UP – Tayari Hat Bazar GC (Lohagora) Road, Satkania- Chattogram

Chainage (from N/E/W/S)	IEFs	Road Side	Comments
00 m	Pond	L	At about 30 m from Ch 00 m
0 – 2000 m	Madrasa	L	Located at about 30 m from the centerline
0 – 2000 m	Bazar	R	Located at about 50 m from the centerline
0 – 2000 m	UP Office	L	Located at about 10 m from the centerline
0 – 2000 m	Pond	R	Located at about 70 m from the centerline
0 – 2000 m	Mosque	L	Located at about 10 m from the centerline
2000 m	School	L	At about 25 m from Ch 2000 m
2000 – 2800 m	Bazar	L	Located at about 40 m from the centerline
2000 – 2800 m	Pond	R	Located at about 15 m from the centerline
2000 – 2800 m	Madrasa	L	Located at about 20 m from the centerline
2800 m	UP Office	L	At about 10 m from Ch 2800 m
2800 – 4600 m	Pond	R	Located at about 60 m from the centerline
2800 – 4600 m	Mosque	L	Located at about 10 m from the centerline
2800 – 4600 m	School	L	Located at about 25 m from the centerline
2800 – 4600 m	Bazar	R	Located at about 5 m from the centerline
4600 m	Hospital	L	At about 10 m from Ch 4600 m

Road ID: 415824225 – Neta Fakir Para (West Side)- Adarsha Gram Road, Satkania- Chattogram

Chainage (from N/E/W/S)	IEFs	Road Side	Comments
0 m	Bazar	L	At about 30 m from Ch 00 m
0 – 610 m	School	L	Located at about 30 m from the centerline
0 – 610 m	Bazar	R	Located at about 50 m from the centerline
0 – 610 m	Mosque	L	Located at about 10 m from the centerline
0 – 610 m	Pond	R	Located at about 70 m from the centerline
0 – 610 m	Bazar	L	Located at about 10 m from the centerline
610 m	School	L	At about 25 m from Ch 1466 m
610– 1100 m	Pond	L	Located at about 40 m from the centerline
610– 1100 m	Mosque	R	Located at about 15 m from the centerline
610– 1100 m	Madrasa	L	Located at about 20 m from the centerline
610– 1100 m	Bazar	L	Located at about 40 m from the centerline
610– 1100 m	School	R	Located at about 40 m from the centerline
610– 1100 m	Bazar	R	Located at about 15 m from the centerline
1100 m	Mosque	L	At about 30 m from Ch 1100 m

Road ID: 415824074 – Uttar Sadaha Mantala Road, Satkania- Chattogram

Chainage (from N/E/W/S)	IEFs	Road Side	Comments
1800	UP Office	L	At about 30 m from Ch 2754 m
1800– 2000 m	Madrasa	L	Located at about 30 m from the centerline
1800– 2000 m	School	R	Located at about 50 m from the centerline
1800– 2000 m	Mosque	L	Located at about 10 m from the centerline
1800– 2000 m	Bazar	R	Located at about 70 m from the centerline
1800– 2000 m	Pond	L	Located at about 10 m from the centerline
2000 m	Mosque	L	At about 25 m from Ch 3177 m
2000 – 2282 m	Pond	L	Located at about 40 m from the centerline
2000 – 2282 m	Madrasa	R	Located at about 15 m from the centerline
2000 – 2282 m	Bazar	L	Located at about 20 m from the centerline
2282 m	UP Office	L	At about 10 m from Ch 3558 m

Road ID: 415822007 – Nalua- Satkania Road via Nalua Hadar Khal Bridge, Satkania- Chattogram

Chainage (from N/E/W/S)	IEFs	Road Side	Comments
00	Bazar	R	At about 30 m from Ch 00 m
0 – 1420 m	School	L	Located at about 30 m from the centerline
0 – 1420 m	Pond	R	Located at about 50 m from the centerline
0 – 1420 m	Mosque	L	Located at about 10 m from the centerline
0 – 1420 m	Madrasa	R	Located at about 70 m from the centerline
0 – 1420 m	Bazar	L	Located at about 10 m from the centerline
1420 m	School	R	At about 25 m from Ch 1420 m
1420 – 3150 m	Bazar	L	Located at about 40 m from the centerline
1420 – 3150 m	Mosque	R	Located at about 15 m from the centerline
1420 – 3150 m	pond	L	Located at about 20 m from the centerline
3150 m	School	L	At about 10 m from Ch 3150 m

Road ID: 415824032 – Eochia Chara Embt. Road, Satkania- Chattogram

Chainage (from N/E/W/S)	IEFs	Road Side	Comments
00	Pond	R	At about 30 m from Ch 00 m
0 – 455 m	Bazar	L	Located at about 30 m from the centerline
0 – 455 m	School	R	Located at about 50 m from the centerline
0 – 455 m	Pond	L	Located at about 10 m from the centerline
0 – 455 m	Mosque	R	Located at about 70 m from the centerline
0 – 455 m	Madrasa	L	Located at about 10 m from the centerline
455 m	Bazar	R	At about 25 m from Ch 455 m
455 – 890 m	School	L	Located at about 40 m from the centerline
455 – 890 m	Bazar	R	Located at about 15 m from the centerline
455 – 890 m	Mosque	L	Located at about 20 m from the centerline
890 m	Pond	L	At about 10 m from Ch 890 m

Road ID: 415823005 – Paschim Dhemsha UPC – Chowdhury Hat via Anufakir Dokan Road, Satkania-Chattogram

Chainage (from N/E/W/S)	IEFs	Road Side	Comments
1600	School	R	At about 30 m from Ch 00 m
1600 -2310 m	Housing	L	Located at about 30 m from the centerline
1600 -2310 m	Small Industry	R	Located at about 50 m from the centerline
1600 -2310 m	Khal / Canal	L	Located at about 10 m from the centerline
1600 -2310 m	Bazaar / Market	R	Located at about 70 m from the centerline
1600 -2310 m	Mosque	L	Located at about 10 m from the centerline
2310 m	Pond	R	At about 25 m from Ch 2310 m
2310 – 3173 m	Water Body	L	Located at about 40 m from the centerline
2310 – 3173 m	Intersection	R	Located at about 15 m from the centerline
2310 – 3173 m	School	L	Located at about 20 m from the centerline
3173 m	Bazar	L	At about 10 m from Ch 3173 m

Road ID: 415824049 – Chib Bari School – Choto Barodona GPS Road (Sha Monsuria Road), Satkania-Chattogram

Chainage (from N/E/W/S)	IEFs	Road Side	Comments
1600	School	R	At about 30 m from Ch 00 m
1600 -2310 m	School	L	Located at about 30 m from the centerline
1600 -2310 m	Masjid	R	Located at about 50 m from the centerline
1600 -2310 m	Waterbody	L	Located at about 10 m from the centerline
1600 -2310 m	Local Grocery Shop	R	Located at about 70 m from the centerline
1600 -2310 m	Graveyard	L	Located at about 10 m from the centerline
2310 m	Deep Tube-well	R	At about 25 m from Ch 2310 m
2310 – 3173 m	Pond	L	Located at about 40 m from the centerline
2310 – 3173 m	Residential Cluster	R	Located at about 15 m from the centerline
2310 – 3173 m	Electric Transformer	L	Located at about 20 m from the centerline
3173 m	Govt Primary School	L	At about 10 m from Ch 3173 m

7.2 Construction induced impact issues

As the works will be carried out entirely on vacant, government-owned land within the existing LGED ROW, no land acquisition or displacement is anticipated, and no land-related construction impacts are expected.

During construction, however, the movement of heavy vehicles and machinery, temporary material stockpiles, and general site activities may cause localized, short-term disturbances (e.g., dust, noise, traffic interruptions) and a risk of accidental damage to nearby roadside features or utilities. These impacts will be prevented and managed through the contractor's site-specific ESMP consistent with the ESMF, including at minimum:

- Traffic Management Plan (signage, flagmen, safe detours);
- OHS Plan (PPE, equipment safety, training);
- Community Health & Safety measures (dust suppression, noise control, access management);
- Waste and spoil management (proper storage, transport, disposal);
- Chance-find procedure (if applicable).

If any damage or grievance is reported, LGED will promptly verify and address it with the contractor, ensuring repair/restoration or compensation per the ESMF/RPF. All cases will be recorded and handled via the project Grievance Redress Mechanism (GRM) for transparent, time-bound resolution.

7.3 Construction Yard and requisition of land (if required)

The LGED has conducted consultations with relevant stakeholders regarding the establishment of construction yards for the sub-project. It has been confirmed that the contractor will utilize vacant government land for setting up the construction yard, material storage, and equipment placement during the construction period.

If additional land is required and no suitable government land is available, the contractor may temporarily rent private land from willing landowners on a mutually agreed rental basis. Such temporary rental arrangements will be managed through voluntary, documented agreements**,** ensuring that the land is restored to its original condition upon completion of works.

In cases where LGED prefers to requisition land for temporary use, the process will follow the procedures stipulated under the Acquisition and Requisition of Immovable Property Act, 2017 (ARIPA 2017), the principal legislation governing land acquisition and requisition in Bangladesh.

Key provisions under ARIPA 2017 relevant to temporary requisition include:

- **Section 20:** Requisition may be undertaken only for urgent public purposes such as emergency road repair or construction.
- **Section 22(1–2):** The Deputy Commissioner (DC) will determine the value of requisitioned assets in consultation with affected landowners.
- **Section 22(6):** Requisition can be made for a maximum period of two years**;** if the land is required for a longer duration, a new agreement must be executed with the landowners at a negotiated rate.

- **Section 23:** Compensation shall be paid by the DC to the affected landowners.
- Compensation will cover:
  (i) loss of use during the requisition period,
  (ii) any damage to the property during occupancy, and
  (iii) reasonable expenses for restoration to its original condition after release.
- If the land contains standing crops cultivated by tenants (Bargadars) under a valid written agreement, compensation must be paid directly to the tenants according to the terms of that agreement.
- Requisition of residential or community properties is not permitted **under** any circumstances.

Any loss or damage to structures, trees, crops, or business operations arising from temporary land use will be addressed in line with ARIPA 2017, and the mitigation and compensation procedures outlined in the Resettlement Policy Framework (RPF) and Environmental and Social Management Framework (ESMF) of the B-STRONG Project.

7.4 Road Connectivity & Feature Benefit

All proposed roads under Package BSTRONG–LGED–CHA/RD-7 will be integrated with the surrounding existing bituminous-carpeted (BC) road network, thereby strengthening overall rural connectivity within Satkania Upazila.

The construction of RCC, BC, and HBB-surfaced roads is intended to improve the transport and communication system of local communities so that residents can move safely and efficiently between villages and service centers. The improved network will:

- Provide all-weather access to essential destinations such as hat-bazaars, schools, health centers, places of worship, and township areas;
- Reduce travel time and transport costs, especially during monsoon seasons when earthen roads become impassable;
- Facilitate emergency evacuation during floods or cyclones by connecting households with higher-elevation shelters and main roads;
- Enhance livelihood opportunities by improving access to markets, education, and employment; and
- Contribute to an overall improvement in the living standards and socioeconomic resilience of the local population.

The proposed sub-project, therefore, is expected to yield substantial social and economic benefits, complementing the B-STRONG project's objective of climate-resilient and people-centric infrastructure development.

7.5 Impact Mitigation Measures

In addition to the land required within the existing Right-of-Way (ROW) for road construction, the contractor may require temporary land to establish ancillary facilities such as labor sheds, materials storage yards, and construction camps.

Where possible, such facilities will be established on vacant government land. If suitable government land is not available, the contractor may rent private land temporarily from willing landowners through

voluntary, documented agreements. All rental arrangements must be made on a mutually agreed basis, free from any coercion or undue influence, and the land must be restored to its original condition upon completion of works.

Before commencing works at any site, LGED will ensure that the required land is free and available for use. If private land is used temporarily, adequate rental or compensation will be provided following the principles outlined in the Resettlement Policy Framework (RPF) and the Environmental and Social Management Framework (ESMF). The Project Implementation Unit (PIU) will monitor and follow up on compliance with these procedures.

During construction, the contractor will also ensure safe pedestrian and community access around active work zones. All walkways will be clearly marked with visible signage and maintained in good condition to provide adequate space, stability, and ease of movement for pedestrians and local residents.

Detailed environmental and social mitigation and monitoring measures are provided in Annex-3, consistent with the requirements of the ESMF and the Contractor's Environmental and Social Management Plan (C-ESMP).

8. Consultation

Stakeholder consultation is an integral part of the environmental and social screening process under the Bangladesh Sustainable Recovery, Emergency Preparedness and Response Project (B-STRONG).

Meaningful engagement ensures that local stakeholders are informed about the sub-project objectives, design, and potential impacts, and that their views are reflected in project planning and implementation. The Social and Environmental Team of LGED, together with the Design and Supervision Consultant (DSC) and the Upazila Engineer (LGED, Satkania), organized several consultation meetings and focus-group discussions to gather feedback from community members, government representatives, and other interested parties.

Participants were informed about the proposed road rehabilitation, potential environmental and social (E&S) impacts, and mitigation measures described in the project's Environmental and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF).

A total of 103 participants (83 male and 20 female) took part in four consultation sessions held in December2025. Discussions focused on project benefits, construction-related risks, community safety, employment opportunities, and the grievance redress process.

Table 4: Summary of Consultation Meetings and FGDs

Sl. No.	Date	Venue	Main Participant Groups	No. of Participants	Key Issues Discussed
01	December 01, 2025	Satkania Upazila	Flood-affected communities and roadside residents	Male 25, Female 5	Proposed road alignment, anticipated E&S impacts, and mitigation measures
02	December 02, 2025	Satkania Upazila	Local government officials (Upazila	Male 20, Female 6	Scope of LGED road rehabilitation, potential

			Engineer, Union Parishad representatives)		E&S impacts, and mitigation plans
03	December 03, 2025	Satkania Upazila	Union Parishad Chairmen & Members	Male 16, Female 5	Project benefits, E&S risks, grievance redress mechanism (GRM), and coordination
04	December 04, 2025	Satkania Upazila	Vulnerable groups including women and ethnic minorities	Male 22, Female 4	Project benefits, inclusion of vulnerable groups, GRM awareness, and safety measures

Table 5: Summary of Consultation Outcomes

Issues	Opinions and Questions	Reply from LGED
Compensation	Have any compensation provision if any assets are affected by the project?	Yes. If any assets are affected, LGED will take necessary steps for compensation as per the provisions of the RPF and ESMF.
Project location	Satkania, Chattogram District	The sub-project will be implemented within Satkania Upazila under the B-STRONG Project.
Vulnerable HHHs / Severely Affected HHs	Have any vulnerable or severely affected households along the alignment?	No. No vulnerable or severely affected households have been identified during the screening and census survey.
Female HHHs	Any female-headed households found along the alignment?	None identified during the survey. However, LGED ensures equal participation and employment opportunities for women.
Improvements of local business facilities	Will local business facilities increase after road development?	Yes. After road development, economic transactions and local trade will increase, improving communication and access to markets.
Grievance Redress Committee (GRC)	Is there any scope to address grievances during project implementation?	Yes. LGED has formed a Grievance Redress Committee (GRC) at the Upazila level to resolve any sub-project related grievances promptly.
Structures	Will any structures be affected by the project?	No. The alignment is vacant, and no structures will be affected.
Land	Except the existing Right-of-Way (ROW), will any additional land be required?	No. The sub-project will be implemented within the existing government-owned alignment.
Livelihood	Will livelihoods be hampered due to construction works?	No. Livelihoods will not be hampered; rather, local people will get short-term employment opportunities during construction.
Community Property Resources (CPR)	Will any mosques, temples, or community properties be	No. Mosques, temples, or any historical and cultural establishments will not be affected

Issues	Opinions and Questions	Reply from LGED
	affected? If so, what mitigation measures will LGED take?	partially or entirely by the sub-project implementation.
Trees	Will any trees be affected by the construction?	No. Trees will not be affected since the alignment is free and clear.
Business loss	Will any permanent or temporary businesses be affected?	No. Business activities will not be affected due to the vacant alignment.
Wage loss	Will daily laborers be affected?	No. There will be no wage loss; instead, local daily laborers will have employment opportunities in construction activities.
Road safety	During construction, accidents may occur. Is there any plan to mitigate these issues?	Yes. Road safety will be maintained strictly. Before starting work, the contractor will arrange a safety orientation for staff and the local community, install warning signs, and ensure protective measures.

Key Outputs of Stakeholder Consultation Meetings:

- Effective coordination will be established between the community stakeholders and the Government (LGED) for smooth implementation of the new road construction.
- First-aid boxes and basic medical facilities will be ensured at all active construction sites.
- Capacity-building and awareness training will be provided for relevant stakeholders on social safety and security, traffic management, labor influx management, and community engagement.
- Adverse social impacts will be avoided or minimized through careful site selection, design, and construction planning.
- Active participation of stakeholders will be maintained throughout the project cycle to enhance ownership and cooperation.
- Unavoidable adverse impacts, if any, will be identified early and addressed through appropriate mitigation measures in accordance with the ESMF and RPF.
- Social conflict and grievance management will be strengthened during the construction period through the functioning Grievance Redress Mechanism (GRM).
- Compliance with national labor laws will be strictly enforced, including prohibition of child labor, adoption of the workers' Code of Conduct, fair wages, and non-discrimination between male and female workers.
- Equal wages and facilities will be ensured for female laborers, along with appropriate site security and sanitation arrangements.
- Prevention of Gender-Based Violence (GBV), Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH) will be ensured through awareness, monitoring, and enforcement of the Code of Conduct at the work site.

9. Contractor and Labor Management

Excluding a small percentage of the skilled technical workforce, most of the labor force is expected to be recruited from the local communities within Satkania Upazila, who share similar socio-economic, cultural, religious, and demographic backgrounds. This common profile among workers will help maintain social harmony and minimize the potential for internal conflict within the workforce.

Based on consultations with local stakeholders, it has been noted that implementing contractors may need to hire a limited number of skilled workers from outside the project area for specialized construction tasks. However, since this portion of the workforce will be small, the possibility of any significant social tension or conflict between local and external workers is considered low.

Public consultations further indicated that women's participation in construction work is very limited, primarily due to low female labor-force engagement in the area. In response, Gender-Based Violence (GBV) and Sexual Exploitation and Abuse (SEA)/Sexual Harassment (SH) awareness training will be conducted at the work sites before the commencement of construction to promote respectful workplace behavior and prevent any conflict or misconduct among male and female workers.

10. Traffic Management

During the construction phase, movement along existing roads may be temporarily disrupted due to excavation, material storage, or equipment operation. To minimize inconvenience, the contractor will prepare and implement a Traffic Management Plan (TMP) as part of the Contractor Environmental and Social Management Plan (C-ESMP).

The plan will include the provision of temporary detours or alternative routes to facilitate the safe and smooth movement of pedestrians, vehicles, and local residents during construction. The contractor will deploy trained traffic personnel and install appropriate traffic signage, barricades, and flagmen at key points to guide and control movement.

The cost associated with establishing and maintaining these alternative routes and traffic-safety measures has been included in the Bill of Quantities (BOQ).

All traffic management activities will be implemented in close coordination with the Upazila Engineer (LGED), local authorities, and law enforcement agencies to ensure public safety and minimize disturbance to daily mobility.

11. Monitoring System

The Local Government Engineering Department (LGED), through the Project Implementation Unit (PIU), is responsible for the overall monitoring and implementation of environmental and social requirements for the sub-project. This includes coordination among the Upazila Engineer, Executive Engineer (XEN), Design and Supervision Consultants (DSC), and the PIU Environmental and Social Team. Together, they will ensure systematic collection, verification, analysis, and reporting of environmental and social (E&S) data throughout the project lifecycle.

The field-level team will regularly collect data and update records on any environmental issues (e.g., dust, noise, waste handling, runoff/drainage) and social issues (e.g., community access, grievances, disturbances, asset damage) observed during construction. Their role includes monitoring performance against the Environmental and Social Management Plan (ESMP) and identifying any non-compliance or risks that require timely mitigation.

The contractor will deploy a qualified Environmental and Social (E&S) specialist at site level to ensure day-to-day implementation of the mitigation measures outlined in the Contractor ESMP (C-ESMP). This officer will document field activities and report to the Upazila Engineer and the PIU E&S focal points.

Regular site visits, inspections, and compliance checks will be conducted jointly by LGED, the DSC, and PIU representatives to assess E&S performance. If any deviations or unanticipated impacts are identified, corrective actions will be recommended and monitored until resolved.

Monitoring outcomes will be documented in periodic E&S reports and submitted to the World Bank, ensuring transparency and accountability in accordance with the Environmental and Social Management Framework (ESMF) and related instruments (e.g., ESMP, RPF, LMP).

12. Grievance Redress Mechanism (GRM)

The B-STRONG has established a Grievance Redress Mechanism (GRM) to ensure that any concerns or complaints related to environmental and social issues are properly recorded, addressed, and resolved in a transparent and timely manner.

At the field level, Grievance Redress Committees (GRCs) have been formed under the leadership of the Upazila Engineer (LGED). Each GRC consists of representatives from the Union Parishad, local community leaders, women representatives, and the contractor, ensuring inclusiveness and accessibility.

A Grievance Register will be maintained at both the Upazila Office and construction site level to document all complaints received and actions taken. Community members, workers, and other stakeholders are encouraged to submit their grievances verbally or in writing. Complaints may be lodged directly with the Upazila GRC, through the PIU, or by contacting LGED representatives whose contact information is displayed on Environmental and Social Information Boards at each sub-project site.

To ensure accessibility and inclusion, women and vulnerable groups will be encouraged to submit complaints through their preferred channel or representative. All grievances will be acknowledged, reviewed, and resolved within a reasonable timeframe in accordance with the GRM procedures outlined in the Environmental and Social Management Framework (ESMF).

The PIU will maintain a consolidated grievance database, monitor progress on complaint resolution, and include summaries of grievances and their outcomes in quarterly environmental and social monitoring reports submitted to LGED Headquarters and the World Bank.

13. Impacts by the sub-project and Alignment with World Bank ESS

The proposed sub-project is expected to have a range of positive environmental and social impacts, along with some minor, temporary negative impacts that may arise during construction. Overall, the sub-project will contribute to improved connectivity, local economic development, and enhanced community resilience in Satkania Upazila, Chattogram District. This section summarizes the key impacts and links them to the relevant World Bank Environmental and Social Standards (ESS).

13.1 Positive impacts

The implementation of the sub-project will significantly improve socio-economic conditions and the quality of life of the local population.

Key anticipated positive outcomes include:

- Improved transport and communication facilities, ensuring safe and reliable movement of people and goods throughout the year.
- Enhanced access to essential services such as schools, health centers, markets, religious, and government institutions.
- Improved connectivity during floods or emergencies, facilitating timely evacuation and disaster response.
- Reduced travel time and cost for commuters, traders, and transport operators.
- Increased road safety and travel comfort due to improved pavement design and construction standards.
- Improved market access for farmers and small traders, enabling them to receive fair prices for agricultural and commercial products.
- Creation of local employment opportunities during construction, enhancing household income and stimulating the local economy.
- Improved livelihoods and economic mobility for rural communities as a result of better accessibility.
- Strengthened local government service delivery through improved road connectivity to administrative and public institutions.
- Overall enhancement of social cohesion, accessibility, and community well-being within the project area.

These positive outcomes are consistent with ESS1 (Assessment and Management of Environmental and Social Risks and Impacts), ESS10 (Stakeholder Engagement and Information Disclosure) and, indirectly, ESS4 (Community Health and Safety) through improved safe and predictable access during normal and emergency conditions.

13.2 Potential adverse impacts and ESS linkages

While no significant or long-term adverse effects are expected, certain temporary environmental impacts may occur during the construction phase and, to a lesser extent, operation. These are summarized below by relevant ESS and are addressed in the ESMP (Section 12 and Annexes 3–4).

13.2.1 ESS1: Assessment and Management of Environmental and Social Risks and Impacts

- Short-term construction nuisances, including localized dust from earthworks, material handling and haulage; noise from construction machinery; temporary access constraints and traffic disruption in bazaar and settlement sections; and localized risk of silt-laden runoff entering roadside drains, ponds and khals.

- Minor, temporary disturbance to community activities near schools, mosques, markets and health posts located close to the carriageway.

These risks are site-specific, reversible and of low magnitude. They are addressed through ESMP provisions on dust suppression, noise control, phased works, drainage management, traffic control and community communication.

13.2.2 ESS2: Labor and Working Conditions

- Occupational health and safety (OHS) risks for workers, including hazards related to manual handling, equipment operation, noise, heat stress and traffic interface.
- Risks related to labor and working conditions, such as inadequate use of PPE, long working hours or lack of rest breaks, and limited awareness of workers' rights and responsibilities.

These risks are mitigated through enforcement of national labor laws, the project Labor Management Procedures (LMP), workers' Code of Conduct, provision and use of PPE, safety training, incident reporting and a dedicated workers' GRM, as reflected in Annex-3 and Annex-4 ESMP measures.

13.2.3 ESS3: Resource Efficiency and Pollution Prevention and Management

- Use of construction materials (aggregates, sand, bitumen, cement) and water for construction and workers' needs.
- Temporary air-quality impacts from dust and vehicle emissions.
- Risks of soil and water contamination from improper storage or handling of fuels, oils, lubricants, cement wash-water and construction waste.
- Generation of construction and domestic solid waste and small quantities of hazardous waste (e.g., used oil, oily rags, filters).

These are addressed through measures on resource efficiency, responsible sourcing of materials from licensed suppliers, dust and noise control, proper fuel and chemical storage, spill prevention and implementation of a Waste Management Plan, in line with ESS3.

13.2.4 ESS4: Community Health and Safety

- Increased traffic and safety risks near settlements, schools, mosques and markets during construction due to movement of trucks and machinery and temporary narrowing or diversion of carriageways.
- Potential accidents and injuries to pedestrians, road users and nearby residents if traffic is not properly managed.
- Community exposure to construction-related hazards, including dust, noise, open excavations and temporary obstructions.
- Contextual risks of Gender-Based Violence (GBV), Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH) associated with worker–community interaction, even though labor influx is expected to be small and mostly local.

These impacts are mitigated through the Traffic Management Plan (TMP), road-safety measures (signage, speed control, safe pedestrian routes), community health and safety measures, GBV/SEA/SH prevention, training and enforcement of the workers' Code of Conduct and accessible GRM, consistent with ESS4.

13.2.5 ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

- Screening confirms that no land acquisition is required and all works will be implemented within the existing LGED Right-of-Way (ROW).

- No physical or economic displacement is anticipated; no structures, trees or community properties are expected to be affected.
- Minor, temporary impacts may occur if private land is voluntarily rented for construction yards or if temporary access to shops/homesteads is disrupted during works.

These risks are managed under the project Resettlement Policy Framework (RPF) and ESMF through voluntary and documented rental agreements for any temporary land use, restoration of temporarily used sites to original condition, provision of alternative access and prompt resolution of any grievances. This is consistent with the avoidance and minimization principles of ESS5.

13.2.6 ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

- The immediate corridor is a modified rural landscape dominated by homesteads, agricultural fields, and planted trees; no critical natural habitats or legally protected areas fall within the Right-of-Way.
- Local khals and ponds form part of the broader Sangu and Dolu River basins, which are vital for local fisheries and maintain the ecological balance of the South Chattogram region. While the road segments are located within settled areas, these waterbodies serve as critical drainage and irrigation links.
- Short-term risks relate to increased turbidity and siltation in small drains and khals during road works, particularly during flash flood events common in Satkania. There is also potential for contamination from improper disposal of spoil, waste, or cement wash-water near waterbodies.

These risks are addressed by restricting in-stream works to dry periods where feasible, maintaining base flows, using silt fences and sediment traps, prohibiting waste disposal into waterbodies and restoring banks after works. As works are confined to existing roads outside ECA core zones, impacts under ESS6 are low and manageable.

13.2.7 ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities

Screening and consultations confirmed that no Indigenous Peoples (tribal communities) reside in the sub-project area. ESS7 is therefore not considered applicable at this stage. If new information arises during implementation indicating the presence of such communities, the sub-project will be re-screened and ESS7 requirements will be applied as relevant.

13.2.8 ESS8: Cultural Heritage

- No listed archaeological or nationally protected heritage sites were identified within the project footprint.
- Community cultural and religious structures (mosques, temples, graveyards) exist near some sections but will not be physically affected.
- There remains a low likelihood of encountering previously unknown chance finds during excavation.

The sub-project will follow the chance-find procedure set out in the ESMF: immediate suspension of works in the affected area, securing the site, notifying the competent authority and the PIU, and resuming works only after clearance and any required design adjustments.

13.2.9 ESS10: Stakeholder Engagement and Information Disclosure

- Multiple consultations and focus-group discussions have been conducted with local communities, shopkeepers, farmers, students, women, religious leaders and local government representatives.
- Stakeholders expressed strong support for the sub-project and highlighted the need for continued information sharing during construction, including work schedules, traffic arrangements and GRM contacts.

Ongoing stakeholder engagement, disclosure of project information (through meetings, signboards and leaflets) and a functional Grievance Redress Mechanism (GRM) at upazila and site levels are integral to the sub-project design, in line with ESS10.

The impact assessment confirms that the sub-project's environmental and social risks are low, localized and construction-related and that they can be effectively managed through the ESMP and C-ESMP measures consistent with the applicable ESS (**ESS1, ESS2, ESS3, ESS4, ESS5, ESS6, ESS8 and ESS10**). **ESS7** is not applicable because no Indigenous Peoples were identified, and **ESS9** (Financial Intermediaries) is not relevant as the project is implemented directly by LGED. No significant, cumulative or irreversible impacts are anticipated.

14. Environmental and Social Management Plan (ESMP)

Based on the outcomes of public consultations, social screening, and field assessments, a Social and Environmental Management Plan has been prepared to identify the mitigation and management measures required to address potential social risks and impacts associated with the subproject.

The ESMP outlines site-specific actions designed to avoid, minimize, or mitigate adverse social impacts that may occur during the construction and operation phases. Key measures include:

- Ensuring community health and safety, particularly in and around construction sites;
- Maintaining access to public and community facilities during construction;
- Managing potential construction-related disturbances such as noise, dust, or traffic disruption;
- Preventing and mitigating labor influx–related risks, including SEA/SH and child labor concerns; and
- Promoting equitable employment opportunities for local residents, with priority given to vulnerable and disadvantaged groups.

The Local Government Engineering Department (LGED), through its Project Implementation Unit (PIU), will be responsible for overall coordination, supervision, and monitoring of the ESMP. Field-level oversight will be carried out by the Upazila Engineer in close collaboration with the Design and Supervision Consultant (DSC) and ES specialists at the PIU.

The ESMP will be reviewed and updated periodically throughout project implementation to reflect any new or unforeseen social issues and ensure continued compliance with the Environmental and Social Management Framework (ESMF) and World Bank Environmental and Social Standards (ESS1, ESS5, and ESS10).

A site-specific mitigation plan, developed from field-level consultations and findings, is included in Annex 4 of this report.

15. Recommendations

Effective disclosure of project information and continuous stakeholder engagement are essential to ensure transparency and promote community ownership throughout the implementation of the sub-project. All relevant construction-related information such as work schedules, potential disruptions, environmental management measures, and safety precautions should be shared with local communities prior to and during construction activities.

Active involvement of local communities, government representatives, and other stakeholders will help foster a sense of participation and responsibility in maintaining the newly improved infrastructure. Establishing and maintaining a functional Grievance Redress Mechanism (GRM) is equally important to enable affected individuals or groups to raise concerns and obtain fair and timely resolution through impartial review.

Attention should be given to social and environmental safety during the construction period. Before commencing any physical works, all personnel involved in road construction including contractors, laborers, and site supervisors should participate in a short orientation and awareness session organized by the contractor. This session should cover topics such as:

- Occupational health and safety (OHS);
- Community health and safety;
- Gender-Based Violence (GBV), Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH) prevention;
- Environmental pollution control and waste management;
- Emergency response and first aid.

These measures will ensure that the project is implemented in a socially responsible and environmentally sustainable manner, minimizing adverse impacts and enhancing overall project benefits for the community.

16. Screening Outcome and Next Steps

16.1 Summary of residual environmental and social risks

The screening confirms that the proposed rehabilitation of approximately 16.60 km of rural roads within the existing LGED Right-of-Way (ROW), does not involve land acquisition, physical or economic displacement, or impacts on protected areas or critical habitats. No Indigenous Peoples (tribal communities) were identified within the project influence area.

Residual risks are limited to the following:

Construction-related environmental risks

- Localized, short-term dust and noise near active work fronts;
- Temporary siltation and flow disturbance at small khals and drains during road works;
- Risk of improper handling of wastes, fuels and lubricants if not managed as per ESMP;
- Minor topsoil disturbance and shoulder erosion within the ROW if turfing and drainage are not maintained.

Community health and safety risks

- Temporary access disruption and traffic-safety risks, especially near markets, schools, mosques and densely settled segments;
- Contextual risks of GBV/SEA/SH and worker-community conflict if the Code of Conduct and awareness measures are not enforced.

Labor and OHS risks

- Injuries and occupational illnesses for workers if PPE use, safe work practices and incident reporting are not consistently applied.

These residual risks are site-specific, reversible and of low magnitude, and can be effectively managed through full implementation of the ESMP and the Contractor's ESMP (C-ESMP).

Overall environmental and social risk rating

Based on the nature and scale of the works, the in-ROW location, the absence of land acquisition and displacement, and the manageability of construction-related risks, the sub-project is classified as having Low Environmental and Social Risk under the B-STRONG project.

16.2 Required next steps

To operationalize the screening results and ensure compliance with the ESMF and the World Bank ESF, the following key next steps are required:

Finalization and disclosure of ESMP

- Confirm and finalize the sub-project ESMP (Annex-3 and Annex-4) and integrate relevant clauses and BOQ items (Annex-5) into the bidding documents and civil-works contract.
- Disclose key ESMP measures, GRM contacts and indicative work schedules to local stakeholders through meetings and information boards at site.

Preparation and approval of Contractor's ESMP (C-ESMP)

Require the selected Contractor to prepare a site-specific C-ESMP that includes, at a minimum:

- Traffic Management Plan (TMP) and Traffic Control Plan (TCP);
- OHS Plan and Emergency Response Plan (ERP);
- Waste Management Plan and camp/ancillary-facility management measures;
- GBV/SEA/SH Action Plan and detailed workers' Code of Conduct implementation arrangements;
- Method statements for high-sensitivity locations (markets, schools, road sites).

LGED PIU and the DSC will review and clear the C-ESMP prior to mobilization and will ensure that it is implemented and updated as needed during construction.

- No new or previously unrecorded elephant-migration routes or other critical wildlife corridors intersect the road segments; and
- The sub-project does not encroach on any legally protected areas, ecologically critical areas, or wildlife sanctuaries within Satkania Upazila.

If any new sensitivity is identified, the PIU will carry out focused additional screening and, if needed, prepare a short biodiversity/elephant-corridor note with tailored mitigation (e.g., night-time movement controls, awareness signage, additional supervision).

Strengthening of monitoring and GRM

- Confirm that field-level E&S staff (Contractor, UE, DSC, PIU) are in place and trained on ESMP and C-ESMP requirements.
- Operationalize and publicize the Grievance Redress Mechanism (GRM), ensuring multiple entry points and special attention to women, elderly persons and persons with disabilities.
- Establish periodic E&S monitoring and reporting (checklists, photo records, incident logs), with summaries submitted to LGED HQ and the World Bank as part of regular progress reporting.

16.3 Need for further studies

Based on the current screening and risk classification, no stand-alone ESIA or detailed biodiversity assessment is required for this sub-project, provided that:

- Works remain confined to the existing LGED ROW; and
- ESMP and C-ESMP measures are fully implemented and supervised.

If, during detailed design or implementation, new information emerges (e.g., confirmed elephant-movement routes, critical habitat, or unexpected significant impacts), the PIU will prepare additional focused assessments or notes (such as an updated biodiversity/elephant-corridor note) and revise the ESMP and C-ESMP accordingly in consultation with the World Bank.

17. Environmental and Social Codes of Practice (ESCoPs)

The following Environmental and Social Codes of Practice (ESCoPs) apply to all works under Package B-STRONG–LGED–CHA/ RD-7. They set out minimum, enforceable requirements for environmental and social management during construction and are consistent with the B-STRONG Environmental and Social Management Framework (ESMF), including the Labor Management Procedures (LMP), Stakeholder

Engagement arrangements and site-specific ESMPs. They are to be read together with the sub-project ESMP (Section 13 and Annex-3/Annex-4) and the Contractor's ESMP (C-ESMP).

Key provisions of these ESCoPs shall be:

- Incorporated into the bidding documents, including technical specifications and Bill of Quantities (BOQ) items (Annex-5);
- Reflected in contract clauses and strictly enforced by LGED and the Design and Supervision Consultant (D&SC); and
- Used as a basis for site supervision checklists and compliance monitoring.

17.1 General principles

The Contractor shall:

- Plan and execute all works so as to avoid, minimize and mitigate environmental and social risks and impacts;
- Comply with applicable national laws and regulations, the B-STRONG ESMF, the sub-project ESMP, the C-ESMP and these ESCoPs;
- Prepare, submit and obtain approval of a C-ESMP (including method statements and required management plans) before commencing site works, and update it as needed during construction;
- Assign a qualified Environmental and Social (E&S) focal person at site to oversee day-to-day implementation; and
- Cooperate fully with LGED, the PIU and D&SC during inspections, monitoring and corrective actions.

17.2 ESCoP for earthworks and borrow area management

- Strip fertile topsoil (up to 15 cm) from areas to be significantly disturbed and store separately in low, stable stockpiles (≤ 2 m high) away from drains and low-lying areas for later reuse in turfing and plantation.
- Protect exposed slopes using turfing, vegetation and/or pitching as per design to minimize erosion.
- Avoid excavation and soil dumping on agricultural land, in homesteads, or within natural drainage paths.
- If borrow material is required, use only authorized borrow areas with documented permission/lease from landowners and relevant authorities; do not open new borrow pits near waterbodies without prior approval from LGED/PIU.
- Ensure that any approved borrow areas are safely shaped and drained at the end of use so as not to create stagnant waterbodies or mosquito-breeding sites; restore to an agreed condition with the landowner.

17.3 ESCoP for drainage works and in-stream activities

- Plan works at roads so that baseflow is maintained (e.g., by temporary pipes, channels or bailey arrangements) and no complete blockage of khals or drains occurs.

- Schedule in-stream or near-stream activities outside peak monsoon periods, where practicable, to minimize turbidity and siltation.
- Locate spoil heaps and material stockpiles at least 30 m away from waterbodies and drainage outfalls; use silt fences, toe bunds, or other measures to prevent eroded material from entering khals, ponds and ditches.
- Prohibit direct discharge of cement wash-water, grout, oils, lubricants, or any chemicals into watercourses, drains or low-lying depressions.
- Promptly reinstate channel banks and embankment slopes after works using turfing, riprap, bamboo piling or other approved protection measures.
- Ensure that all cross-drainage structures are constructed/rehabilitated in accordance with design to maintain or enhance hydraulic capacity and reduce waterlogging.

17.4 ESCoP for bitumen handling and asphalt works

- Store bitumen, emulsions and related chemicals in secure, bunded areas with impervious flooring, under cover, away from drains and waterbodies.
- Provide fire-extinguishing equipment, spill kits and appropriate PPE (heat-resistant gloves, goggles, boots) at all locations where bitumen is handled or heated.
- Ensure bitumen heating is done in well-maintained, purpose-built equipment; open fires for heating bitumen are strictly prohibited.
- Prevent spillage of bitumen and aggregates on shoulders and into side drains; if spills occur, remove contaminated soil and dispose of at a designated, PIU-approved location.
- Do not dispose of asphalt waste, milled material, or bitumen-stained soil in agricultural land, homesteads, waterbodies, or drains.
- Ensure that any on-site mixing or patching operations are conducted with adequate ventilation and that workers are protected from fumes and burns.

17.5 ESCoP for traffic management and road safety

- Prepare and implement a Traffic Management Plan (TMP) and Traffic Control Plan (TCP), consistent with the ESMP, ESMF and contract requirements, covering: detours, one-way controls, access to homesteads and shops, emergency vehicle passage, and school/market safety. The TMP/TCP shall be reviewed and cleared by the D&SC/PIU prior to works.
- Maintain at least one safe lane (minimum 3.0 m width) for local traffic along the corridor at all times, except during short-duration closures that are announced in advance and managed with flagmen.
- Install and maintain clear traffic signs, cones, barricades, reflective tapes and lights around work zones, particularly near schools, mosques, markets and junctions.
- Deploy trained flagmen at critical points during peak hours and at locations with constrained visibility.
- Enforce speed limits for project vehicles and machinery, particularly within settlement and bazaar areas.
- Coordinate with local authorities and law-enforcement agencies as needed to manage traffic and ensure safety.

17.6 ESCoP for waste management and pollution prevention

- Prepare and implement a site-specific Waste Management Plan in line with the ESMP and ESMF, covering construction and domestic waste streams.
- Segregate waste at source into recyclable, non-recyclable and hazardous categories; reuse/recycle where feasible.
- Provide sufficient waste bins and temporary storage facilities at sites and camps; keep all areas clean and free from litter.
- Dispose of non-hazardous waste only at LGED/municipality-approved disposal sites; open dumping and burning of waste are strictly prohibited.
- Collect and store hazardous waste (used oil, oily rags, filters, contaminated soil, chemical containers) in labelled, leak-proof containers within a bunded area, and hand over to a DoE-authorized handler with proper records.
- Prevent any discharge of oil, grease, cement wash-water or other pollutants into drains, khals, ponds or agricultural land; immediately contain and clean up any spills.

17.7 ESCoP for occupational health and safety (OHS)

- Provide all workers with appropriate PPE (helmets, high-visibility vests, safety boots, gloves, eye and hearing protection, masks/respirators where needed) and enforce their proper use.
- Conduct regular toolbox talks and training on site hazards, safe work procedures, heat stress, manual handling, working near traffic, and emergency response.
- Ensure all machinery and vehicles are fit for purpose, regularly inspected and maintained, with functional brakes, lights, silencers and safety devices.
- Install and maintain safe walkways, work platforms and edge protection where required; clearly demarcate exclusion zones around heavy equipment.
- Provide first-aid kits, trained first-aiders and emergency contact information at all work sites and camps; ensure timely medical attention in case of accidents.
- Prohibit child labor and forced labor; adhere to working-hour limits and rest breaks in line with national labor law and the project LMP.
- Maintain an incident and accident register, report serious incidents promptly to LGED/PIU in line with ESMF and World Bank incident reporting requirements, and implement corrective actions to prevent recurrence.

17.8 ESCoP for community health and safety

- Plan and phase works to minimize disruption to community access, especially in front of schools, mosques, markets and health facilities; provide temporary ramps, footbridges and safe crossings as needed.
- Control dust by regular water sprinkling on exposed surfaces and haul roads near settlements during dry periods; cover trucks transporting earth, sand and aggregates.
- Limit noisy activities to daytime hours; inform nearby communities in advance of particularly noisy or disruptive works.
- Implement measures to prevent unauthorized public access to work sites (e.g., fencing, signage, night lighting where required).
- Enforce a strict workers' Code of Conduct covering respectful behaviour, prohibition of GBV/SEA/SH and harassment, prohibition of alcohol/drug use on site, and respect for local customs and vulnerable groups.

- Inform communities of the Grievance Redress Mechanism (GRM), including contact points and procedures, and respond promptly to any complaints related to dust, noise, access, safety or worker behaviour, keeping records in the GRM register.

17.9 ESCoP for construction camps and ancillary facilities

- Locate labor camps, yards and stockyards on approved land (preferably government land or voluntarily rented private land) away from schools, health facilities, dense residential clusters and drainage paths.
- Provide adequate, gender-segregated sanitation facilities, safe drinking water, solid waste collection, drainage and basic lighting within camps, in line with ESMP and LMP requirements.
- Maintain good housekeeping in camps: regular cleaning, safe food storage, proper waste disposal, and control of standing water to reduce vector-breeding.
- Ensure separate and safe facilities for female workers (toilets, bathing areas, lighting and privacy).
- Implement rules prohibiting tree cutting, wildlife hunting, GBV/SEA/SH, child labor, gambling, and other anti-social behaviour within camps and in surrounding communities.
- Upon completion of works, dismantle all temporary facilities, remove waste, and restore camp and yard areas to their original or agreed condition, as specified in the ESMP, C-ESMP and contract.

17.10 Linkage with ESMP, C-ESMP and contract enforcement

- These ESCoPs form an integral part of the sub-project ESMP (Section 13 and Annex-3/Annex-4) and shall be explicitly reflected in the Contractor's ESMP (C-ESMP), method statements and work plans.
- Relevant ESCoP requirements shall be included as:

    - Specific clauses in the Conditions of Contract**;**
    - Obligatory provisions in technical specifications; and
    - Separate ESM, OHS and social safeguard items in the BOQ **(**Annex-5), so that compliance costs are covered.

- Non-compliance with these ESCoPs shall be treated as non-compliance with contract conditions and may lead to instructions for corrective action, withholding of payments, and other contractual remedies as applicable.

18. Conclusions

The implementation of the proposed sub-project is not expected to cause any significant environmental or social impacts. Land acquisition will not be required, as all works will be carried out within the existing government-owned Right-of-Way (RoW), which is adequate for the planned interventions. Consequently, no relocation or population displacement is anticipated.

The sub-project does not affect any private assets, trees, or community/cultural/archeological properties. A Management Plan has been developed to address any minor or unforeseen issues that may arise during construction, ensuring adherence to the Environmental and Social Management Framework (ESMF) and other relevant project instruments.

The implementation of the sub-project will generate multiple social and economic benefits. It will create direct and indirect employment opportunities, particularly for local unskilled workers, and will stimulate the local economy through increased labor engagement and material demand. Improved road connectivity will enhance access to healthcare, education, markets, and administrative services, benefiting all sections of the community, including women, children, persons with disabilities (PWDs), and the elderly.

Overall, the proposed sub-project will contribute significantly to improving rural accessibility, disaster preparedness, and socio-economic resilience in Satkania Upazila. The project is therefore considered environmentally sound, socially acceptable, and highly recommended for implementation under the Project.

Annex 1: At a Glance Key Findings by Environmental and Social Screening of LGED Sub Project's under package BSTRONG-LGED-CHA/RD-7

Sl No.	Name of sub-project / road or structure segment	Nature of work	Length / size*	Loss of livelihood due to construction	Tribal people	Status of stakeholder consultation	Key environmental issues / sensitivities (based on field visit and photos)	Key social issues / sensitivities (based on field visit and photos)	Overall ES risk level	Remarks
1	Dewan Hat GC-Tayari Hat GC (Lohagora) Satkania Portion	RCC/BC road improvement and minor slope/shoulder works within existing embankment and ROW	Part of total 16.60km corridor	No houses, shops and other income-generating structures are outside the working strip; only very small temporary disturbance to front-yard uses expected	No	Corridor-level consultations held with local residents, shopkeepers, representatives and religious leaders; communities expressed strong support	Road has severely damaged bituminous surface with potholes, ruts and standing water in some built-up locations; narrow carriageway with roadside trees and dense vegetation in many rural stretches; risk of sediment/muddy runoff during construction if shoulders and surface drainage are not managed; road lies on	Passes through mixed rural and semi-urban areas with schools, mosques and small bazaars close to the carriageway; existing poor surface already creates safety risks for pedestrians, rickshaws and three-wheelers; construction will temporarily add traffic/access disruption near institutions and market areas,	Low (site-specific construction risks in a populated floodplain corridor; manageable through ESMP and supervision)	Recommended for implementation as part of the evacuation route, subject to strict ESMP measures for drainage, traffic safety, dust/noise control and vegetation protection

							Gomuti floodplain with adjacent low-lying fields/ponds, so maintaining and improving cross-drainage is important	requiring traffic management, communication and OHS measures; no land acquisition or long-term livelihood loss identified		
2	Uttar Sadaha Mantala Road	RCC/BC road improvement within existing embankment and ROW	Part of total 16.60km corridor	No – field screening did not identify any shops or homesteads that would need to be removed; temporary business disturbance may occur where work-fronts cross bazar frontages	No	Consultations held with bazar committees, transport users and local residents; strong demand for all-weather road and improved evacuation function	Mix of densely built-up bazar area and vegetated rural sections; pavement is worn/patched with broken edges and localised ponding indicating poor surface drainage; narrow platform with trees and homestead vegetation close to the road in rural parts; potential dust/mud, shoulder erosion and silt-laden runoff to nearby drains/ponds if spoils and	High pedestrian and non-motorised traffic in bazar segments with informal trading close to the carriageway; accident risk if traffic management is weak; short-term access constraints for shops/households; labour influx small (mostly local); no physical or economic displacement anticipated	Low (localized but manageable impacts; strong emphasis needed on traffic and access management, worker code of conduct and communication)	Recommended for implementation; C-ESMP should give special attention to bazar sections (staging, safe pedestrian paths, engagement with shopkeepers)

							materials are poorly managed			
3	Neta Fakir Para (West Side)-Adarsha Gram Road	RCC/BC road improvement within existing embankment and ROW	Part of total 16.60km corridor	No permanent structures within the active construction strip identified; only minor temporary impacts on informal roadside uses expected	No	Community and market-level consultations conducted; road identified as important for access to hats/bazaars, schools and health services	Unsealed/heavily deteriorated surface through a busy rural market area at one end with stalls close to road; earthen/partially paved stretches with dense roadside trees elsewhere; high dust/mud generation and poor runoff; potential scouring of shoulders/side drains; road lies in Gomuti basin floodplain, so maintaining cross-drainage and preventing blockage of khals/ditches is key	Market segment has intense pedestrian–vehicle interaction; construction will introduce heavy vehicles/work zones into congested space, increasing safety risks unless access control, flagmen and signage are applied; in rural stretches, narrow platform and tree-lined edges require care to avoid tree damage and maintain safe passage; no land acquisition/long-term displacement expected	Low (construction-related but sensitive in market areas; manageable under ESMP with strong supervision)	Recommended; focus on market-area traffic/crowd management, dust/mud control and protection of roadside trees and access paths
4	Nalua-Satkania Road via NaluaHadar Khal Bridge at 1.0 Km	RCC/BC road improvement within existing embankment and ROW	Part of total 16.60km corridor	No	No	Covered in consultations as	Primary environmental benefit is improved	Short-term access constraints at culvert		

	& Gatiadanga High School (from Ch.8.0 Km of Charati-Khoderhat-Noyahat-Bazalia					priority for resolving local waterlogging and restoring cross-drainage	cross-drainage and reduced waterlogging; construction risks include temporary blockage of flow paths, siltation/turbidity, and poor spoil/material storage near drains; nearby ponds and vegetated ditches can be protected through standard good practice	locations during excavation and concreting; need safe pedestrian crossing arrangements, signage, and community notice; no land acquisition or permanent access loss; long-term benefit through improved road safety/access and reduced waterlogging		
5	Satkania U.P.-Tayari Hat Bazar GC (Lohagora) road	RCC/BC road improvement within existing embankment and ROW	Part of total 16.60km corridor	No	No	Covered in consultations as priority for resolving local waterlogging and restoring cross-drainage	Primary environmental benefit is improved cross-drainage and reduced waterlogging; construction risks include temporary blockage of flow paths, siltation/turbidity, and poor spoil/material storage near drains; nearby ponds and vegetated ditches can be protected	Short-term access constraints at culvert locations during excavation and concreting; need safe pedestrian crossing arrangements, signage, and community notice; no land acquisition or permanent access loss; long-term benefit through		Recommended; focus on market-area traffic/crowd management, dust/mud control and protection of roadside trees and access paths

							through standard good practice	improved road safety/access and reduced waterlogging		
6	Eochia chara Embt.Road	RCC/BC road improvement within existing embankment and ROW	Part of total 16.60km corridor	No	No	Covered in consultations as priority for resolving local waterlogging and restoring cross-drainage	Primary environmental benefit is improved cross-drainage and reduced waterlogging; construction risks include temporary blockage of flow paths, siltation/turbidity, and poor spoil/material storage near drains; nearby ponds and vegetated ditches can be protected through standard good practice	Short-term access constraints at culvert locations during excavation and concreting; need safe pedestrian crossing arrangements, signage, and community notice; no land acquisition or permanent access loss; long-term benefit through improved road safety/access and reduced waterlogging		Recommended for implementation as part of the evacuation route, subject to strict ESMP measures for drainage, traffic safety, dust/noise control and vegetation protection
7	Paschim Dhemsha UPC-Chowdhury Hat via Anufakir dokan road	RCC/BC road improvement within existing embankment and ROW	Part of total 16.60km corridor	No	No	Covered in consultations as priority for resolving local waterlogging and restoring cross-drainage	Primary environmental benefit is improved cross-drainage and reduced waterlogging; construction risks include temporary blockage of flow paths, siltation/turbi	Short-term access constraints at culvert locations during excavation and concreting; need safe pedestrian crossing arrangements, signage, and		Recommended for implementation as part of the evacuation route, subject to strict ESMP measures for drainage, traffic safety, dust/noise control and

							dity, and poor spoil/material storage near drains; nearby ponds and vegetated ditches can be protected through standard good practice	community notice; no land acquisition or permanent access loss; long-term benefit through improved road safety/access and reduced waterlogging		vegetation protection
8	Chib Bari School-Choto Barodona GPS Road (Sha Monsuria Road)	RCC/BC road improvement within existing embankment and ROW	Part of total 16.60km corridor	No	No	Covered in consultations as priority for resolving local waterlogging and restoring cross-drainage	Primary environmental benefit is improved cross-drainage and reduced waterlogging; construction risks include temporary blockage of flow paths, siltation/turbidity, and poor spoil/material storage near drains; nearby ponds and vegetated ditches can be protected through standard good practice	Short-term access constraints at culvert locations during excavation and concreting; need safe pedestrian crossing arrangements, signage, and community notice; no land acquisition or permanent access loss; long-term benefit through improved road safety/access and reduced waterlogging		Recommended for implementation as part of the evacuation route, subject to strict ESMP measures for drainage, traffic safety, dust/noise control and vegetation protection

Annex 2: Environmental and Social Screening Form

Local Government Engineering Department (LGED)
Bangladesh Sustainable Recovery, Emergency Preparedness and Response Project (B-STRONG)
Environmental and Social Screening Form of Sub Project (Filled Form)

Section A: Sub-Project Overview

Description of sub-project/component interventions:
Rehabilitation of approximately 16.60 km of emergency-evacuation rural roads within the existing LGED Right-of-Way (ROW) in Satkania Upazila, Chattogram District, including construction/rehabilitation roads at specified chainages. Works include pavement upgrading, shoulder and slope repairs, roadside drainage rehabilitation and cross-drainage improvements, and road-safety features (signage/markings and speed calming near sensitive receptors). No new alignment; no land acquisition.

Sub-project Location: Satkania Upazila, Chattogram District

Expected construction period: 18 months

Description of project intervention area and project influence area with schematic diagram (where relevant, indicate distance to sensitive environmental areas and historical or cultural assets): Please also explain any analysis on alternative location was conducted:

Answer: The sub-project rehabilitates existing LGED rural road links within government-owned Right-of-Way (RoW) in Satkania Upazila, Chattogram District. The immediate intervention area comprises the road corridor, including the carriageway, shoulders, and drainage structures. The broader project influence area covers adjacent homesteads and shops, nearby schools and health posts, local markets, religious institutions, and the union roads connecting to the corridor. Works remain strictly on the existing alignment to minimize footprint, avoid land take, and limit disturbance to nearby receptors.

At the upazila scale, the river-drainage network of Satkania Upazila represents the main environmental sensitivity. The screened road sections lie along existing upland rural corridors and do not encroach on any rivers, ponds, or khals, but some roadside drains and small canals ultimately discharge to local water bodies. Good-practice controls, such as sediment and runoff management, spoil handling, and staged construction near drains, will be applied to ensure that downstream water quality and aquatic ecology remain unaffected.

No listed historical or archaeological assets were found within the road RoW during field verification. If any previously unrecorded cultural object is encountered, the chance-find procedure outlined in the ESMF will be followed, and the design adjusted if necessary. Nearby community facilities (mosques, schools, markets, and health posts) will remain accessible; temporary access management and safety signage will be provided during works. These measures are consistent with the ESMP templates and best-practice guidance for rural-transport projects.

Alternative analysis:
A new (greenfield) alignment was screened out because the project's objective is to restore functionality and evacuation capacity on existing links. Retaining the current RoW minimizes environmental and social impacts, costs, and disruption. Within-corridor options, such as pavement rehabilitation type, shoulder treatment, and road sizing, were reviewed to optimize hydraulic

performance and safety while limiting construction-period impacts and maintaining community access. This approach aligns with World Bank ESF principles of proportionate risk management: avoid, minimize, then mitigate.

Section B: Environmental Screening

B.1: Environmental feature of sub-project location

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

Screening and field observation did not identify any listed archaeological or nationally protected heritage structures within the corridor. Typical community receptors places of worship, schools, small markets, and health posts occur intermittently along the road. None will be physically affected. Access will be maintained through phased work fronts, safe pedestrian routing, temporary footbridges where needed, and clear wayfinding signage. A chance-find procedure will apply during any excavation; if cultural material is encountered, works will pause, the area will be secured, and the competent authority consulted before resumption.

Location of environmentally important and sensitive areas:

The sub-project is situated in a mixed rural landscape with dispersed homesteads, agricultural plots, and roadside vegetation in Satkania Upazila. Local khals and seasonal waterbodies occur within the broader area of influence. Based on LGED's screening and field verification, no legally designated protected areas, critical habitats, or other environmentally sensitive zones fall within the immediate construction footprint (i.e., within the existing LGED Right-of-Way).

Within the wider landscape, the road corridor in Satkania Upazila is connected to local ponds, khals, and floodplain water bodies. These support small-scale fisheries and are important for local livelihoods, giving them moderate conservation and socio-economic value.

There are no legally protected forests, wildlife sanctuaries, or Key Biodiversity Areas within or near the road corridors in Satkania Upazila. Any nearby natural habitats are limited to homestead vegetation, agricultural land, ponds, and khals. The absence of nearby protected areas reduces the likelihood of significant impacts on nationally or internationally recognized biodiversity).

As works are confined to in-ROW rehabilitation into these designated areas, only negligible, indirect impacts (for example, sediment-laden runoff into local drains and khals) are anticipated. Standard good-practice measures for erosion and sediment control, spoil handling, and site housekeeping will be implemented near drains and low-lying areas to safeguard local watercourses and avoid any indirect effects on the Meghna River and its connected khals.

(1) **potential impacts on forests —Yes/No**

No significant impacts expected. Works are confined to the existing corridor within a settled/agricultural mosaic; no natural or critical forest stands occur within the influence area, and tree removal is not planned. Micro-siting will avoid mature trees; where avoidance is not feasible, compensatory planting with native species will be undertaken in line with the ESMF. Fuelwood use is prohibited, and materials will be sourced only from licensed suppliers.

(2) **Other issues:**

Short-term construction nuisances in Satkania including dust, noise, and traffic interference—will be mitigated through regular watering, equipment maintenance, daytime scheduling, and clear signage. To prioritize public safety, marshalled pedestrian routes will be established near key institutions such as Satkania Government College, Satkania Model High School, and local primary schools. In response to technical standards for flood-prone areas, improvements to existing

culverts and the thorough cleaning of cross-drains have been prioritized to enhance hydraulic performance and reduce waterlogging, particularly in areas susceptible to Sangu River overflow and low-lying coastal segments. Continuous access to vital hubs like Satkania Bazar, Keranihat, Gunagari, health complexes, and places of worship will be ensured through phased construction, while all temporary work yards will be situated on approved land and fully reinstated after use.

(3) **General wildlife/fish/bird sensitivity– (per UNHCR/IUCN):**

Community consultations and field observations did not indicate the presence of large or migratory wildlife along the screened road corridor in Satkania Upazila. If any sensitive habitats or fauna are identified near a segment, the PIU will re-screen the location and apply proportionate mitigation measures such as restricted night-time construction, additional spotters, targeted awareness signage, and speed control to minimize disturbance

Baseline air quality and noise levels:

Air quality:

Due to the absence of a Continuous Ambient Air Quality Monitoring Station (CAMS) in Satkania Upazila, the baseline air quality conditions have been characterized using Department of Environment (DoE) CAMS data from Chattogram City (TV Station/Agrabad) alongside independent analyses of the Satkania corridor. These analyses indicate that the annual mean PM2.5 concentrations typically range from 60–80 µg/m³, which is approximately 4 to 5.5 times higher than the Bangladesh National Ambient Air Quality Standard (BNAAQS) annual limit of 15 µg/m³ and significantly exceeds the WHO 2021 annual guideline of 5 µg/m³. This elevated concentration is primarily attributed to the proximity of the Chattogram-Cox's Bazar Highway, a high density of brick kilns in the surrounding areas, and heavy vehicular emissions at major intersections like Keranihat and Gunagari. Unlike Mirsarai, Satkania's air quality is more influenced by regional transport and local construction activities rather than large-scale industrial zones, necessitating specific dust suppression and environmental management strategies during the project implementation phase.

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In contrast, the sub-project corridor in rural Satkania Upazila has lower traffic density, more dispersed homesteads, and no large industrial plants or brick-kiln clusters immediately adjacent to the road, as confirmed through field reconnaissance. Local ambient concentrations are therefore expected to be somewhat lower than at Chattogram's urban roadside hotspots, but still influenced by regional haze, biomass burning, and dry-season dust transport. Field observations along the corridor noted:

- Occasional visible dust plumes from vehicle movement on worn shoulders and unpaved access tracks in dry weather;
- Absence of major point sources (large industries, brick kilns) within the immediate LGED Right-of-Way or its immediate fringe.

During construction, short-term, localized increases in dust and combustion emissions may occur from earthworks, material stockpiles and hauling, operation of asphalt/concrete plants, and movement of construction machinery. These impacts are temporary and reversible and will be managed through ESMP / ESMoP provisions, including at minimum:

- Regular water sprinkling on exposed surfaces, haul roads, and stockpiles during dry and windy periods;

- Covering of trucks carrying earth, sand, aggregates, and other fine materials;
- Proper siting, operation, and housekeeping of any batching or mixing plants to minimize
-
- fugitive dust;
- Routine maintenance of vehicles and equipment to reduce visible exhaust smoke; and
- Visual air-quality checks and a mechanism for recording and responding to dust-related community complaints.

These controls are reflected in the ESMP / ESMoP through measurable indicators (e.g., frequency of dust suppression, condition of haul roads, records of complaints and corrective actions).

Noise:
In Satkania Upazila, noise levels typically range from 55–70 dB near major intersections like Keranihat and Gunagari due to vehicular horns and commercial activities. In the rural interior of the sub-project corridor, the levels are lower (45–50 dB), aligning more closely with the Bangladesh Noise Pollution (Control) Rules, 2006 for residential zones. Unlike Mirsarai, Satkania lacks continuous heavy industrial noise, but suffers from intermittent high-decibel spikes during peak traffic hours on the Chattogram-Cox's Bazar Highway. sections of Chattogram where the sub-project roads are located experience lower baseline noise levels than the central city. Ambient noise along most of the corridor is dominated by:

- Light to moderate traffic on the existing rural road;
- Local market and roadside-business activity at specific centres; and
- Periodic use of mosque loudspeakers during prayer times and community events.

Rapid field observations during screening suggest that, under normal conditions, daytime noise levels along most of the alignment are moderate and generally compatible with mixed rural–residential use. However, several noise-sensitive receptors (e.g., schools, mosques, health posts and small clinics) are located close to the carriageway and may already experience brief periods of elevated noise during peak traffic or local events.

Construction activities such as earth compaction, breaking, concrete mixing, loading/unloading of materials, and movement of trucks and construction equipment may temporarily increase noise levels during working hours, particularly in the vicinity of these sensitive receptors. The ESMP therefore specifies, at minimum, that:

- High-noise activities are restricted to daytime hours; routine night-time works are avoided;
- All machinery and vehicles used on site are properly maintained and fitted with effective silencers/mufflers;
- Workers exposed to elevated noise are provided with and required to use appropriate hearing protection (earplugs/earmuffs); and
- Nearby communities and institutions are informed in advance of particularly noisy works (e.g., piling, intensive compaction) and channels are in place to receive and address noise-related complaints.

Compliance with prescribed working hours, availability and use of PPE, condition of equipment silencers, and the number and resolution of community complaints will be tracked through ESMP / ESMoP monitoring.

Baseline soil quality:

Soils along the sub-project corridor in Satkania are characterized by alluvial and piedmont deposits typical of the Chittagong Coastal Plain and the Sangu River basin. The soil texture is predominantly silty loam to sandy clay loam, which offers moderate to good drainage in most elevated areas, though some low-lying segments near the river show clayey textures with slower drainage. The topsoil is fertile, supporting intensive seasonal cropping (such as winter vegetables and paddy) and dense roadside vegetation. The subsoil strata generally consist of compacted silts and clays, providing stable bearing capacity for existing road pavements, although sections near the Sangu River embankment may require monitoring for erosion or seasonal saturation

Field reconnaissance during screening did not reveal signs of industrial contamination, visible waste dumping in the project influence area. Soil fertility and structure appear generally stable, although localized compaction and minor erosion are present on exposed shoulders, informal access tracks, and old borrow pits.

Earthworks for shoulder rehabilitation within the existing ROW. The ESMP includes measures for topsoil management (stripping, protected stockpiling, and re-use for turfing and plantation) to avoid long-term loss of soil productivity around homesteads and agricultural plots adjacent to the works.

Flooding pattern, highest flood level and design considerations:

Satkania lies within the Sangu River basin and the Chittagong Coastal Plain, which experiences flash floods from the eastern hills, seasonal monsoon flooding, and tidal influences in its lower reaches. Data from the Bangladesh Water Development Board (BWDB) for the Dohazari (Sangu) gauge station—the primary monitoring point for this region—indicates that:

- The official Danger Level for the Sangu River at the Dohazari station is 7.00 m PWD.
- During the catastrophic August 2024 flood, the water level at the Dohazari gauge reportedly reached an unprecedented height, significantly breaching the danger level due to heavy rainfall and hilly onrush (upstream flow from the Chittagong Hill Tracts).
- In the interior of the Upazila, including areas along the Dalu Khal, the water level breached operational limits and local embankments, causing extensive inundation. Low-lying areas of Satkania Upazila (such as Keochia, Bajalia, and Bardona) experienced 2.0 to 3.5 meters of standing water, which remained for several days, leading to significant infrastructure damage.

Local consultations confirm that low-lying agricultural lands and some homesteads near khals and river branches experience knee- to waist-deep inundation in severe monsoon events, although the existing road generally remains emergent except at a few low-lying dips.

Design considerations (as reflected in the engineering design package) include:

- Checking the road formation level and road soffit levels against historical BWDB water-level data at relevant local rivers, khals, and drainage channels, including records of recent high floods in the Chattogram district.
- Setting formation levels and drainage structures so that the main evacuation function is maintained during design floods, with appropriate freeboard in line with LGED standards.

- Upsizing and/or cleaning cross-drainage structures to improve hydraulic connectivity and reduce localized waterlogging.

These flood and drainage sensitivities are directly linked to ESMP measures for:

- road works (siltation/flow obstruction);
- Drainage maintenance/waterlogging in the operational phase; and
- Climate and disaster resilience of the corridor (see Annex-3 and Annex-4 ESMP items).

Landslide potential (high/medium/low, with explanation):

Low. The sub-project area is predominantly flat to gently undulating and not within any known landslide-prone or hill-foot zone. No hill cutting or steep gradient exists along the alignment. Local road may experience minor surface erosion during heavy rainfall, which will be managed through adequate side drains, slope turfing, and compaction. The potential for slope instability or mass movement is therefore minimal.

Climate:

Satkania Upazila features a humid tropical monsoon climate with annual rainfall averaging 2,800–3,100 mm, which is significantly higher than the central region, primarily concentrated between May and October (BMD, 2023). Monthly maxima during peak monsoon months frequently exceed 600 mm, driving high-velocity runoff from the Chittagong Hill Tracts (CHT) into the flashy catchments of the Sangu River and Dalu Khal, as well as numerous hilly streams. These hydrological characteristics, combined with the low-lying topography of the Sangu basin, lead to rapid inundation and high-intensity flash flood events, as seen in the devastating August 2024 floods (UNICEF, 2024). This recurring risk of both hilly onrush and prolonged waterlogging necessitates the robust cross-drainage structures, slope protection, and embankment reinforcement measures integrated into the project design and ESMP for Satkania.

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

Groundwater (Satkania): Groundwater serves as the primary source for domestic and agricultural water supply in Satkania Upazila. Studies and field tests conducted in the area, particularly within the Sangu River basin and alluvial aquifer zones, indicate that groundwater pH generally ranges from 6.7 to 8.0, electrical conductivity (EC) from 500 to 1,500 µS/cm, and total dissolved solids (TDS) from 300 to 900 mg/L across sampled tube wells (DPHE, 2023). While the water quality largely complies with WHO and BSTI standards for most parameters, seasonal fluctuations in salinity (EC levels) are observed in the southern and western unions due to tidal influences from the lower Sangu reaches. No significant arsenic contamination was recorded in the project influence area; however, iron concentrations are frequently elevated, reaching up to 3.0 to 6.5 mg/L, which represents an aesthetic exceedance (taste and staining) and is a common characteristic of the deep aquifers in the Chittagong Coastal Plain.

These findings are generally consistent with field experience of slightly iron-rich, otherwise good-quality shallow tube-well water in the non-industrial parts of Satkania. No major groundwater contamination sources (e.g., heavy industry, large landfills) occur immediately adjacent to the road corridor.

Surface water (basin context): Nearby ponds, hilly canals (khals), and drainage channels in Satkania Upazila exhibit seasonal turbidity and naturally occurring microbial content typical of the Sangu River basin. Field observations and environmental studies, influenced by the proximity to the Sangu and Dalu river systems, indicate that:

- pH values in local rivers and khals are generally near neutral to slightly alkaline, ranging from 6.8 to 8.0, influenced by seasonal runoff and hilly discharge.
- Dissolved Oxygen (DO) levels commonly range between 5.2 – 7.5 mg/L, which is favorable for local freshwater fisheries and aquatic biodiversity in the Sangu River catchment (DoE, 2023).
- Total Suspended Solids (TSS) can reach significantly high levels (up to 400–600 mg/L) during the monsoon due to heavy, high-velocity runoff from the Chittagong Hill Tracts (CHT) and intense upstream sediment transport.
- Faecal Coliform counts vary from tens to several thousand CFU/100 mL, primarily linked to monsoon runoff and domestic inputs from dense settlements near hubs like Keranihat and Satkania Bazar.

Although detailed water quality data for Satkania are limited, local water bodies are generally suitable for fish and other aquatic life but can be affected by sedimentation and pollution from surrounding land uses and settlements.

As all works will remain within the existing Right-of-Way (ROW), no direct abstraction from or discharge to nearby rivers is anticipated. If standard environmental management practices are followed—such as prohibiting discharge of cement wash-water, fuels, and oils into roadside drains; maintaining covered stockpiles away from ponds, khals, and drainage outfalls; providing adequate sanitation facilities at work sites; and constructing small settling or soak pits where wash-water is generated—no significant adverse change in surface water quality of local ponds, khals, or roadside ditches is expected. These measures are incorporated in the ESMP/ESMoP to ensure protection of local water bodies during construction

Sources:

- Islam, N., Morshed, A.J.M., & Paul, D.P. (2017). *Comparison of Ground Water Quality between Industrial and Non-Industrial Areas in Chittagong, Bangladesh.* IOSR Journal of Applied Chemistry, 10(3), 1–5; World Health Organization (WHO) Guidelines for Drinking Water Quality
- Department of Environment (DoE, 2024). Strategic River and Canal Water Quality Monitoring Reports Chattogram District sections.
- Bangladesh Meteorological Department (BMD), Chattogram; Regional climate and monsoon rainfall database
- University of Chittagong; WHO Guidelines for Drinking Water Quality; Bangladesh Standards and Testing Institution (BSTI).
- Bangladesh Water Development Board (BWDB) groundwater monitoring, Satkania Upazila, 2024.

Ecological baseline: flora, fauna and IUCN status

Terrestrial flora: The project corridor in Satkania Upazila features a distinct riparian-homestead-agriculture mosaic, influenced by the Sangu River basin and the nearby Chittagong Hill Tracts. Common cultivated and roadside species include Mango (*Mangifera indica*), Jackfruit (*Artocarpus heterophyllus*), Coconut (*Cocos nucifera*), Betel nut (*Areca catechu*), Banana (*Musa spp.*), Bamboo (*Bambusa spp.*), and Rain tree (*Samanea saman*). Additionally, due to its geographical location, fast-growing and fuel-wood species like Akashmoni (*Acacia auriculiformis*) and Eucalyptus (*Eucalyptus globulus*) are frequently observed along embankments and social forestry patches. Unlike the deep coastal belts, species like Mehogani (*Swietenia mahagoni*) and Neem (*Azadirachta indica*) are also prevalent here. Based on the IUCN Red List (2024), none of these species are globally threatened (CR, EN, or VU), as they are widely distributed throughout the region.Aquatic and wetland flora: Small ponds, roadside ditches, khals and low-lying fields in the broader influence area support aquatic macrophytes typical of floodplain wetlands, including water hyacinth (*Eichhornia crassipes*), duckweeds (*Lemna* spp.), *Hydrilla verticillata* and other emergent/floating species. Water hyacinth is recognised as an invasive alien plant but is already widely present in floodplain waterbodies across Bangladesh; the sub-project will not materially affect its distribution.

Representative finfish species occurring in the river and connected khals/ponds include:

Group	Representative species (example)	IUCN global status*
Indian major carps	Rohu – *Labeo rohita*	Least Concern (LC)
	Catla – *Labeo catla* (syn. *Catla catla*)	Least Concern (LC)
	Mrigal – *Cirrhinus mrigala* (mrigal carp)	Least Concern (LC)
Other common fishes	Spotted snakehead – *Channa punctata*	Least Concern (LC)

*According to current IUCN Red List assessments (accessed 2024–2025).

While the project area does not support globally threatened aquatic species, surface water bodies within the wider drainage network provide important livelihood support through local fisheries. Therefore, strict measures are required to prevent construction-related siltation and pollutant discharge into khals and water bodies.

The in-ROW road rehabilitation will not change local drainage patterns; however, connectivity to downstream water bodies highlights the need for strict control of construction-related pollution and sediment runoff.

Terrestrial and avifaunal fauna: The surrounding landscape in Satkania Upazila supports typical riparian and homestead fauna, including small mammals such as rats, fruit bats, and shrews, as well as common reptiles like lizards and various non-venomous snakes. The avian population is particularly diverse due to the proximity to the Sangu River basin and the foothills of the Chittagong Hill Tracts, with frequently observed birds such as Common Myna, Cattle Egret, Pond Heron, Black-crowned Night Heron, and Kingfishers. The numerous khals (canals) and wetlands in the area also serve as a seasonal habitat for various local and migratory birds during the winter months. According to the IUCN Red List (2024), no globally threatened species (CR, EN, or VU) were identified within the project's Right of Way (RoW), and the sub-project is not expected to impact any critical wildlife habitats or protected sanctuaries.

Available literature and consultations did not indicate the presence of globally threatened terrestrial species or any key wildlife migration corridors along the 16.60km road segments. Trees and vegetated areas within the RoW will nevertheless be avoided as far as practicable; where removal is unavoidable, compensatory plantation with native species is included in the ESMP.

Protected and sensitive areas in the wider landscape: The nearest nationally designated Protected Areas (PAs) and Ecologically Critical Areas (ECAs) are located at a considerable distance from the project corridor in Satkania Upazila and are not expected to be directly or indirectly affected by the proposed road rehabilitation works. The road alignment does not traverse any forest reserve or sanctuary (such as the nearby Chunati Wildlife Sanctuary, which lies further south), and all construction activities will remain strictly confined to the existing LGED road Right of Way (RoW). Furthermore, no critical habitats or community-managed conservation areas are situated within the immediate zone of influence of the sub-project.

In the aquatic domain, Satkania Upazila includes small rivers, khals, and drainage channels that support local fisheries and aquatic ecosystems. The sub-project roads lie along upland rural corridors and do not encroach into the main waterbodies. Therefore, potential impacts are expected to be indirect and highly localized, primarily limited to changes in runoff quality during construction if proper environmental management measures are not implemented.

Screening implication and ESMP linkages: Overall, the immediate road corridor has low to moderate ecological sensitivity: habitats are heavily modified and dominated by cultivated species, but the wider basin includes nationally important fish and dolphin habitat downstream. Key ecological risks are therefore:

- Local loss or damage to planted trees and homestead vegetation;
- Short-term disturbance to common birds and small fauna from noise and traffic;
- Increased sedimentation and pollutant loading in roadside drains, ponds, and khals that ultimately connect to local canals and nearby river systems of the Meghna floodplain

These risks are addressed through ESMP measures on:
(i) avoidance/minimization of tree felling and compensatory plantation;
(ii) erosion and sediment control at road sites;
(iii) prohibition of waste and spoil dumping into waterbodies; and
(iv) safe storage and handling of fuels, lubricants and construction chemicals.

This connects the documented ecological sensitivities of local aquatic ecosystems including small rivers, khals, and drainage channels that support local fisheries and biodiversity directly to practical mitigation measures outlined in Annex-3/Annex-4 ESMP tables.

Status of wildlife movement: No dedicated wildlife-movement surveys are available for the immediate project corridor in Satkania Upazila. However, field observations and consultations with local communities did not identify any regular movement routes for large mammals—such as Asian Elephants—directly across these specific road links, as the project areas are heavily modified, village-dominated landscapes. Wildlife activity is primarily limited to small mammals, birds, and reptiles typical of riparian homesteads and agricultural wetlands.

The existing road already serves as a local transport route, and its rehabilitation within the current Right-of-Way (RoW) is not expected to create new barriers to wildlife movement or connectivity. Nonetheless, due to Satkania's proximity to the Chittagong Hill Tracts and the Sangu River basin, if any significant wildlife movement (especially for migratory birds or aquatic species) is observed during the implementation phase, the PIU will re-screen the relevant segments and update the ESMP to include necessary mitigation measures, such as speed calmers or improved signage

State of forestation:
Homestead vegetation is common and widely distributed throughout the area. In addition, scattered tree plantations and small vegetative patches occur around the proposed sub-project site, generally at safe distances from the construction footprint. These stands will not experience any significant adverse effects from the planned works, as all activities will remain within the existing LGED Right-of-Way. Any unavoidable tree removal will trigger compensatory plantation in line with the ESMF and ESMP.

Summary of water balance analysis (For water supply scheme only):
Not applicable. The sub-project involves road rehabilitation works only and will not alter groundwater abstraction or surface-water flow. Any construction water will be obtained from authorized, sustainable sources without affecting community supplies.

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):
No new ancillary facilities are required. Construction access will use the existing LGED road network and nearby public roads. Temporary lay-down/turning areas will be arranged within government land inside/adjacent to the ROW; any additional needs will be identified in the contractor's work program and approved by LGED.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the work force during construction:
Temporary site amenities will be provided by the contractor in accordance with the C-ESMP: portable or pit toilets with septic containment, safe drinking-water supply (tube-well or bottled), and basic lighting and electrical connections sourced from nearby grid lines or portable generators. All facilities will be maintained in sanitary condition and dismantled upon completion

Possible location of labor camps:
Not anticipated at scale. If required, a small temporary camp may be established on approved government land or rented private land through a documented voluntary agreement, situated away from schools, health posts, and places of worship, and outside low-lying or drainage paths. The camp layout will include perimeter drainage, solid-waste collection points, safe potable water and sanitation facilities, and basic fire safety provisions. The contractor will ensure full site reinstatement upon demobilization.

Requirement and type of raw materials (e.g., sand, stone, wood, etc.):
Principal materials include brick aggregates, crushed stone, sand, bitumen, cement, and reinforcing steel. All materials will be procured from licensed, approved sources and verified for environmental clearance (especially for sand and stone quarries). Wood will not be used as fuel or formwork material except limited treated timber for signboards and temporary structures.

Identification of access road for transportation (Yes/No):
Yes. Existing LGED roads and designated public roads will serve as haul routes. A simple Traffic Management Plan will identify entry/exit points, one-way movements where needed, speed limits, and safe crossing near community facilities.

Location identification for raw material storage:
Materials will be stored in designated, fenced, and signposted areas within the construction yard, set back from drains and low-lying locations. Aggregates will be stockpiled on a compacted, well-drained base and covered; cement kept in weather-proof stores; steel stacked on dunnage; fuels and oils placed on impervious, bunded flooring with spill kits. Access will be controlled, housekeeping maintained, and fire-safety and PPE signage displayed.

Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.):
During the pre-construction phase, limited quantities of waste will be generated, primarily from site clearance, topsoil stripping, and material preparation.
Construction wastes: small amounts of concrete/asphalt fragments, excess soils/spoils, and packaging materials from preliminary works.
Domestic wastes (if any labor sheds are established): minor quantities of food waste, paper, plastic, and metal recyclables, and sanitary waste.
Hazardous wastes (small quantities): oily rags, used lubricants/filters, and bituminous residues from equipment servicing or asphalt-handling activities.
Management Approach: All wastes will be segregated at source; reusable or recyclable materials will be recovered where feasible. Non-hazardous waste will be disposed of at approved municipal or LGED-designated disposal sites. Hazardous waste will be stored temporarily in labeled, bunded containers and handed over to authorized handlers. Under no circumstances will waste be dumped into drains, khals, or open areas, nor will open burning be permitted.

B.3: Construction Phase

Type and quantity of waste generated (e.g., Solids wastes, liquid wastes, etc.):
During construction, both solid and liquid wastes will be produced from labor activities, material use, and equipment operation.
Solid waste: Residual waste from small labor camps and construction activities will include brick chips, sand residues, concrete debris, packaging materials, and scrap metals. The total volume is expected to be low and will be minimized through on-site segregation, reuse, and proper disposal at designated sites.
Liquid waste: Limited amounts of liquid waste may result from equipment washing, oil or lubricant leaks, and accidental fuel spills.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):
Type: Principal construction materials include brick aggregates, crushed stone, sand, cement, bitumen, reinforcing steel, and water. Limited quantities of oils, lubricants, and curing compounds will also be used for machinery and pavement work.
Quantity: Exact quantities depend on final design specifications and contractor batch data but are within typical ranges for in-ROW road rehabilitation.

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 Low, for stagnant water bodies. Because water usage will be higher during the construction period. Nonetheless, no possibilities of stagnation of water in the long run is anticipated. 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 waterbodies (wetlands, marshes): (High/Medium/Low with description): **Low.** Works remain within the ROW. Activities at roads/cross-drains will be staged to maintain baseflow. Stockpiles set back from outfalls, silt fencing/toe berms near drains, and prompt reinstatement will avoid siltation and waterlogging.
Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development:(High/Medium/Low with description) **Low.** The improvement works will be limited within the Right of Way of this road component. Though there are some terrestrial or aquatic ecosystem present in that area in the form of ponds, and ditches, majority of those features are located on sufficiently distant places from the road alignment, therefore negligible and short-periodical effects are anticipated. Nonetheless, strong vigilance and proper protective measures must be ensured during the construction period. Also, the area is not known for containing any endangered or threatened species of any kind.
Activities that can lead to landslides, slumps, slip sand other mass movements in roadcuts: **Low.** The terrain in Satkania is predominantly flat to gently sloping. No steep road cuts or hill slopes exist. Proper compaction. Works will be paused during heavy rainfall.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description) **Low.** The area lacks steep gradients; therefore, erosion potential is minimal. Drainage outlets will include stone pitching, riprap, or vegetation cover to dissipate energy and prevent scouring.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: No traffic movement impacts on light are anticipated but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials., This will be managed by preventive measures, like water sprinkling twice a day, covered transport of materials and so on.

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: **Low (Localized, Reversible).** After rehabilitation, the bituminous-carpeted (BC) surface will markedly reduce dust generation compared with the former earthen or damaged road. Minor fugitive dust may occur along shoulders during the dry season from vehicle movement, but it will not pose health or vegetation hazards if the road is regularly swept and shoulders are vegetated. LGED's routine maintenance program will include shoulder turfing and periodic watering near settlements to suppress dust.
Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description) **Low.** No soil degradation is anticipated because the works are confined within the existing road. Proper pavement structure and side-drain maintenance will prevent erosion or sub-grade failure. However, overuse of the road and frequent movement of heavy or overloaded vehicles may cause further destruction of road-bed soils and, in turn, early deterioration of the pavement. Such effects can be managed by imposing barriers at strategic locations to restrict the entry of these types of vehicles.
Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description) Not applicable. The subproject does not include solid- or fecal-sludge-management components.
Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation)

Low. No new borrow pits or quarries were opened under this rehabilitation. Existing roadside drains and cross-roads will ensure adequate runoff and prevent waterlogging. Regular desilting of drains and vegetation maintenance will eliminate vector-breeding potential.
Likely direct and indirect impacts on economic development in the project areas by the sub-project: The sub-project will have significant positive economic impacts on the Satkania Upazila area. Improved road conditions will enhance connectivity between rural settlements and markets, reduce travel time and vehicle operating costs, and facilitate better access to education, healthcare, and administrative services. The improved evacuation route will strengthen community resilience during floods or emergencies. Indirectly, the project will support local trade, transportation services, agricultural distribution, and small enterprises, contributing to overall socio-economic development.
Extent of disturbance or modification of existing drainage channels (rivers,canals) or surface waterbodies (wetlands marshes): (High/Medium/Low with description) **Low.** The rehabilitation works have improved existing roads and cross-drainage structures, thereby enhancing local hydraulic connectivity. During operation, no modification of natural channels is expected. Minor silt accumulation will be managed through routine maintenance and cleaning of side drains and outfalls.
Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) **Low.** Little effects on terrestrial ecosystem are anticipated due to the dust pollution/deposition and vehicular emission, though every ecosystem has some assimilative capacity on its own to lower the associated risks.
Activities leading to landslides, slumps, slips and other mass movements in roadcuts: **Low.** The terrain in Satkania Upazila is generally flat to gently undulating, with no steep cut slopes. Given the relatively low traffic of heavy vehicles, vibration-induced landslides or mass movements are unlikely. Standard road maintenance and drainage measures will be sufficient to ensure slope stability.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation) **Low.** Outflow will be carried through existing lined drains and roads. Regular inspection and maintenance of outlet protection will prevent scouring or channel incision.
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 road improvement will reduce the pollution generated from dust, 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).

Section C: Social Screening

C.1 General Labor Influx Screening

Key Screening questions	Aspects to Consider
Will the project potentially involve an influx of workers to the project location, and will the influx be considered	✓ How many foreign and local workers will be needed for the remaining period of the project, with what skill set? **Answer:** No foreign workers are expected to be employed in this subproject. The workforce will consist primarily of local and regional

significant for the local community?	laborers. A small number of skilled workers may come from outside Satkania Upazila to meet specific technical requirements. ✓ Can the project hire workers from the local workforce? **Answer:** Yes. Most unskilled and semi-skilled laborers will be hired from the local community in Satkania, as required by the contractor. Local recruitment will ensure community acceptance and minimize any potential social conflict. ✓ What is the size and skill level of the existing local workforce? **Answer:** Consultations with local stakeholders indicate that unskilled and semi-skilled workers are widely available within the project area. However, a small number of specialized technicians may need to be engaged from outside of the project area. ✓ If the skill level of the local workforce does not match the needs of the project, can they be trained within a reasonable timeframe to meet project requirements? **Answer:** Yes. The contractor can provide short on-the-job training and skill orientation for local unskilled workers so they can support rehabilitation works under supervision. ✓ How will the workers be accommodated? Will they commute or reside on site or outside of the camp? If so, what size of camp will be required? **Answer:** Most of the workforce will commute daily from nearby communities. Only a small number of outside skilled laborers may require temporary accommodation within the project area. If required, the contractor will establish small, temporary shed. Basic facilities will be provided and dismantled after construction.
Is the project located in a rural or remote area?	✓ What is the size of local population in the project area? **Answer:** The total population within the immediate catchment area of the 16.60 km road corridor is approximately 30000-3500 people across several rural communities in catchment area information from Upazila Engineer. ✓ Is the project located / being carried out in an area that is not usually frequented by outsiders? **Answer: No.** The road is an existing LGED alignment connecting local villages, markets, and community facilities. It is regularly used by residents and visitors from neighboring unions. ✓ What is the frequency and extent of contact between the local community and outsiders? **Answer:** Daily. ✓ Are there sensitive environmental conditions that need to be considered? **Answer:** None were identified within the project footprint. The works are confined to the existing Right-of-Way and will not affect any protected sites or vulnerable community facilities.
Based on the socioeconomic, cultural, religious and demographic qualities of the	✓ Is it likely that the incoming workers and the local community come from a shared socio-economic, cultural, religious or demographic background?

local community, population and the incoming workers, is there a possibility that their presence or interaction with the local community could create adverse impacts?	**Answer:** Except little percentage of skilled workforces, most of the workforces are expected to come from the local community who belong to same socio-economic, cultural, religious and demographic background. Therefore, no adverse impacts are expected to be created. ✓ What is the level of existing resources, and will the incoming workers use or create competition for these resources? **Answer: No.** The project area has adequate access to basic resources such as water, food, and accommodation. Since the majority of the workforce will be local, the limited number of outside skilled workers will not create competition for community resources. The local economy may even benefit from the temporary demand for goods and services. ✓ What is the expected duration of the incoming workers' presence in the community? **Answer:** The construction period is expected to last about 15–18 months. After completion, all temporary labor sheds and facilities will be removed, and workers will demobilize. ✓ Given the characteristics of the local community, are there any specific adverse impacts that may be anticipated? Answer: Short-term and manageable impacts may include temporary disruption of local traffic and access, generation of noise and dust from construction activities, safety risks near active work sites, and minor, temporary effects on roadside crops or homesteads along the alignment.
Consultation with Community People	✓ Has the project authority and contractors conducted any consultation meetings with the community people? **Answer:** Yes. Multiple consultations were conducted by LGED, consultants, and the PIU Environmental and Social team with local communities along the road corridor. Stakeholders included shopkeepers, farmers, transport users, women, local representatives, and religious leaders. Their feedback has been incorporated into the subproject design and mitigation planning. ✓ Are local people aware about the labors? **Answer:** Yes. Communities were informed that most unskilled laborers would be recruited locally, with only a small number of skilled workers coming from outside Satkania. ✓ Has the project authority involved the local community with the project? **Answer:** Yes. The project team has actively involved local stakeholders through focus-group discussions and formal meetings. Residents expressed strong support for the road rehabilitation due to its role in improving connectivity and flood-evacuation capacity.
Involuntary restrictions on land use or on access to legally designated parks and protected areas	
Will people lose access to natural resources, communal facilities and services? **Answer:** No	
If land use is changed, will it have an adverse impact on social and economic activities? **Answer:** Temporary restrictions may occur during active construction (e.g., near road work zones). However, alternative routes or access arrangements will be provided, and no permanent restriction or	

loss is expected.
Will access to land and resources owned communally or by the state be restricted? **Answer:** Access to communally or state-owned land and resources is expected to be minimally and temporarily affected. Short-term restrictions may occur during active construction activities (such as material storage, equipment movement, or road installation). However, alternative routes or access arrangements will be ensured in consultation with the local community so that people can continue to use these lands and resources without major disruption. No permanent loss or restriction of communal or state-owned assets is anticipated.
Any estimate of the likely number of persons that will be displaced by the Project? **Answer:** No. The subproject will not cause any physical or economic displacement. If yes, approximately how many? **Answer:** Not applicable.
Are any of them poor, female-heads of households, or vulnerable to poverty risks? **Answer:** Not applicable.
Are any displaced persons from indigenous or ethnic minority groups? **Answer:** Not applicable.
During Screening, project authority will conduct consultation with the primary and secondary stakeholders and provide their observations in the following sections
Who are the stakeholders of the project? **Answer:** Flood affected local community, people of both side of the road, students, guardians of the Schools, Religious leader, parent, teachers and Implementing Agencies and their agencies, Labors, CBO, Local elected representative, Local Administration, LGED, local and international NGOs working with community.
What social and cultural factors affect the ability of stakeholders to participate or benefit from the proposed policy or project? **Answer:** None identified. The local population is socially cohesive and culturally homogeneous. There are no barriers to participation based on gender, religion, or ethnicity. Community engagement is positive and inclusive.
Are project objectives consistent with their needs, interests and capacity? **Answer:** Yes. Consultations confirm that rehabilitation of the road aligns with local priorities for better access, flood evacuation, and livelihood improvement.
What will be the impact of the project or sub-project on the various stakeholders, especially women and vulnerable groups? **Answer:** The sub-project will improve year-round access to schools, health centers, and markets, reducing travel time and enhancing mobility for women, children, the elderly, and persons with disabilities. Women will particularly benefit from safer and quicker travel to health and education facilities and opportunities for short-term employment during construction.
What social risks might affect project or sub-project success? **Answer**: Minor, short-term, and manageable social risks may affect sub-project success if not properly mitigated. These include: • **Minor conflict risk** between local residents and incoming workers due to cultural or behavioral differences, if not properly managed. • **Temporary price increase** of essential commodities in nearby markets (hat/bazars) due to higher demand from construction workers. • **Possibility of misconduct or anti-social behavior** by a few incoming workers that may conflict with local social norms and values, if not controlled through worker Code of Conduct enforcement.

- **Noise and dust pollution** from construction machinery, which may temporarily disturb students, elderly persons, or households adjacent to the work zone.
- **Potential damage to weak local access roads** from the movement of heavy vehicles transporting construction materials, temporarily affecting community mobility.
- **Risk of accidents or injuries** at construction sites if occupational health and safety (OHS) practices are not strictly followed.

Has the project authority or any other organizations conducted any consultations with the affected community or people? If yes. Please provide a summary

Answer: Yes. The project authority has conducted several consultations with the potentially affected community and local stakeholders. During site selection, LGED officials held multiple meetings with local residents, Union Parishad representatives, community leaders, school teachers, students, and business owners regarding the rehabilitation of the 16.60km emergency-evacuation rural road in Satkania Upazila.

Feedback and observations received from participants are summarized below:

- Community members strongly supported the decision to rehabilitate the existing evacuation road, noting that it will enhance safety and improve emergency mobility during floods or cyclones.
- Farmers and small traders stated that better road conditions will allow them to transport agricultural goods to markets more efficiently and obtain fairer prices.
- Improved transportation will reduce travel time, costs, and physical hardship for local residents.
- Local businesses and small industries are expected to expand as a result of better connectivity.
- The value of land and properties adjacent to the improved road will increase.
- Better connectivity with Upazila and District hospitals will ensure improved access to healthcare services.
- Easier and safer access will enable residents to participate in civic activities such as voting and public meetings.
- School attendance and enrollment rates, especially among girls, are expected to increase due to safer and quicker travel.
- More than half of the participants mentioned that during previous floods, they were often confined to their homes because of poor road conditions; the rehabilitated evacuation road will significantly reduce such isolation during disasters.
- Participants also emphasized the need to ensure that connecting roads and roads within the same catchment are constructed to flood-resilient standards so that the benefits of the main road are fully realized.

Annex-3: Screening Findings and Mitigation Measures

Mitigation measures need to be proposed in referenced to ESMP Guidelines relevant to the type of the sub-project, proposed ESMF. Accordingly, we have completed the task followed by FGD and public consultation. Those are given below.

Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1:Sub-Project Interventions	Rehabilitation of ≈ 16.60 km rural road (HBB / RCC) in Satkania Upazila					
2: Pre-construction Phase	Loss of land/and other physical assets	**No** adverse impact will be generated	✓ No land acquisition will be required as road will be constructed on existing alignment which entirely Government land ✓ No Households will be affected by the intervention of sub-projects. If we found any grievance from the neighboring household, we will consult on emergency basis in order to solve the problem by project GRC.	LGED- PIU, consultant, PSC and D&SC	✓ Number of Complaints ✓ Check Grievance register ✓ Resolutions against the grievances	Ensure regular supervision and Monitoring based on compliance.
	Loss of livelihood	**No** impact may be generated	✓ No significant impact will be generated by the sub-project Local people particularly woman labor shall get priority with equal payment at the time of labor recruitment. ✓ Code of conduct required for the labors. ✓ During construction work	PIU consultant, PSC and D&SC	✓ Labor wages payroll ✓ Interview with labor ✓ Frequent visit by D&SC and PIU personnel ✓ Copy of code of conduct	Weekly basis

Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			social safeguard compliance shall be maintained properly by the contractor.			
	Loss of right to access	**No** adverse impact will be generated	✓ In case of unavoidable circumstances, alternative access will be provided.	PIU consultant, PSC and D&SC	✓ Physical verification ✓ Picture of alternative way ✓ Community feedback	Monthly basis
	Avoidance and minimize socially sensitive area	**No** adverse impact will be generated	✓ Any disruption of socially sensitive areas with regard to human habitation and areas of cultural significance will be avoided. ✓ Social, cultural and religious institution like; Educational institution, Mosque, temple, archeological structure shall take care of carefully for avoiding or minimizing physical fractures and esthetical values. ✓ Chance-Find Procedure will be followed immediately if any cultural/archaeological object is encountered.	Construction Contractor	✓ Visit to socially sensitive area ✓ Interaction with local community ✓ Chance-find log (if any)	Monthly basis
	Safety and security Issues	**Low** impact may be generated	✓ An unauthorized person entry to the proposed site shall restrict strictly and ensure proper storage and control of hazardous materials on site.	Construction Contractor	✓ Labor camp and storage shed of hazardous materials on site ✓ Training register ✓ ID card of labor	Monthly basis

Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			✓ Health and safety training to the labors ✓ All the labors to wear ID cards ✓ Child labors are not allowed for any form of activities ✓ Site(s) shall be secured by fencing and manned at entry points		✓ Fencing, entry and exit point ✓ PPE availability.	
	Resource sourcing and transport	**Low** impact may be generated	✓ Obtain materials only from licensed quarries and borrow areas. ✓ Cover trucks and control speed ≤ 20 km/h near settlements	Construction Contractor	✓ Material source permits ✓ haul route inspection. ✓ Covered transport observed	Monthly basis
	Traffic Management	**Low** impact may be generated	✓ Traffic management plan (TMP) will be developed by construction contractors, and it duly approved by relevant authority ✓ Contractor will develop traffic control plan (TCP) considering the car movement, bi-cycle, and Rickshaw movement, pedestrian facility, storage, Load and unload of materials from the transport etc. Clear and specific indication shall be in the TMP where parking lot	Construction Contractor	✓ TMP & TCP available in place ✓ Interview of pedestrians and vehicle riders ✓ Signpost, signage, signboard, billboard, leaflet etc. ✓ Report of awareness raising event on traffic management ✓ Physical visit of divert roads	Monthly basis

Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			will be established and how it will be managed. ✓ Adequate arrangement shall be in TMP for reducing suffering of pedestrians, disabled persons, cyclists, transit service, emergency vehicles, trucks and general-purpose traffic. ✓ Adequate alternative arrangements to be made to minimize impact on motorist and pedestrians. ✓ Adequate road signs to be planted on access roads to limit vehicular speeds ✓ Construct properly designed speed ramps on access roads ✓ Traffic signs shall be in Bangla language at appropriate places.		✓ Traffic sign in Bangla language	
	Increase in road accidents	**Low** impact may be generated	✓ The movement of heavy machinery and equipment shall be restricted to defined routes. ✓ Proper signage to be displayed at major junctions. ✓ Road diversions and closures to be informed well in advance to the local community.	Construction Contractor	✓ No. of Accidents took place at construction site ✓ Police and Hospital Record ✓ Local witness ✓ Complaint register	Monthly basis

Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			✓ The vehicular movement to be controlled near sensitive locations viz. schools, colleges, hospitals, identified along designated vehicular transportation routes. ✓ Local community will be trained on traffic management and awareness			
3: Construction Phase	Temporary partition between construction places and neighboring HHs and other important junctions	**Low** impact may be generated	✓ Contractor will make sure the temporary divider/partition between construction area and the locality under BOQ budget. This divider will be made in such a way that the traffic movement and normal activities of neighboring people do not hamper.	Construction Contractor	✓ Visiting the sub-project site ✓ Picture of divider/ partition	Monthly basis
	Safety during construction of the RCC roads and followed PPE	**Low** impact may be generated	✓ Awareness building program will be taken on social safety matters through imparting training from the project before commencement. At the same time, compliance shall be ensured by the contractors. ✓ Wherever required, personal protective equipment (PPE) such as ear plugs, earmuffs, helmets, etc. shall be provided	Construction Contractor and Monitored by Consultant of PIU and D&SC	✓ Training register/Documents on Social safety matters ✓ Checking stock register of personal protective equipment (PPE)	Fortnightly basis

Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			to the persons working in high-risk areas.			
	Drinking water and sanitation facility for male and female workers	**Low** impact may be generated	✓ Construction camps shall have adequate drinking water facility by ensuring water filter, water sealed latrines, urinals and appropriate bathing place.	Construction Contractor and Monitored by Consultant of PIU and D&SC	✓ Check tube well ✓ Water quality test randomly ✓ Check sanitation facilities ✓ Check bathing places	Weekly basis
	Dust and Noise from construction works	**Low** impact may be generated	✓ 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 sprinkling manually and through water pipes. ✓ Construction activity shall be restricted to daytime as far as possible to avoid disturbance to surrounding areas.	Construction Contractor and Monitored by Consultant of PIU and D&SC	✓ Physical visit ✓ Interview with local people	Weekly basis
	Conflicts with existing users due to the	**Low** impact may be generated	✓ A detailed assessment of the available resources and consent of the local representative for withdrawal	Construction Contractor and Monitored by	✓ Approval letter/ Consent letter of Local	On weekly or fortnightly basis

Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	scarcity of resource		of water from existing surface water sources shall be taken. ✓ If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells. ✓ Local community must be consulted before start any construction works.	Consultant of PIU and D&SC	Representative or concern authority ✓ Grievance registers and its resolutions ✓ Proceedings of Consultations with local community	
	Labor Base Camp: Conflicts with the local residents	**Low** impact may be generated	✓ An alternate arrangement for fuel wood, heating and cooking shall be arranged for the labors at labor camp. ✓ Awareness building about nutrition, disaster risk resilience or mitigation, adoption of clean energy for cooking; and prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. ✓ Work force shall be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling.	Construction Contractor and Monitored by Consultant of PIU and D&SC	✓ Checking use of resources by labor ✓ Document checking of awareness building activities ✓ Physical Checking ✓ Grievance register ✓ Interview with local community	Daily site visit

Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			✓ Anti-social activities strictly prohibited			
	Health & Safety Risks	**Low** impact may be generated	✓ Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis: ✓ All construction equipment used for the execution of the project works shall be fit for purpose and carry valid inspection certificates and insurance requirements. ✓ Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. ✓ Signpost any slippery areas, ensure proper footwear with a good grip is worn for personnel working within slippery areas. ✓ Carry out fire risk assessment for the construction areas, identify sources of fuel and ignition and establish general fire precautions including,	Construction Contractor and Monitored by Consultant of PIU and D&SC	✓ Regular site visit ✓ List of materials such as Fire extinguisher, first Aid box. ✓ Fitness certificate of equipment provided concern Authority. ✓ Visibility report of site post, signboard, Walkway, road direction, festoon containing precautionary measures ✓ List of Personnel equipment materials ✓ Training document checking ✓ Contractor will be ensured to PMO whether they have recruited SSO & validation of documents.	Daily site visit/inspection.

Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			means of escape, warning, and fighting fire. ✓ Electrical equipment must be safe and properly maintained; works shall not be carried out on live systems. ✓ First aid kit with adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. shall be made available by the contractor on site. ✓ Awareness training sessions shall be established and provided 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, dehydration. ✓ Based on ESMF construction contractor will deploy Social Safeguard officer to ensure safety measures.			
	Traffic Accidents	**Low** impact may be generated	✓ Clear road markings and signage	Construction Contractor and Monitored by	✓ No. of accident took place	Monthly basis

Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
		during construction even some times after construction	✓ Road design to ensure traffic speed is not hazardous given slopes and bends ✓ Recording and reporting of accident incidents to local police station ✓ Annual reporting of accident figures to PSC	Consultant of PIU and D&SC	✓ Marking and signage of road ✓ Record of police station and PSC ✓ Newspaper	
	Waste Management	Improper management and handling of hazardous and non-hazardous waste during construction	✓ Preparation of a waste management plan covering the following aspects: ✓ Residual waste from the temporary accommodation facilities Waste and from equipment maintenance/vehicles on-site ✓ Wastes after completion of construction works. Reuse/recycling will be undertaken where feasible; no open dumping or burning; hazardous waste stored in labeled, bunded containers and handed to authorized handlers ✓ Proper consents for hazardous waste management.	Construction Contractor and Monitored by Consultant of PIU and D&SC	✓ Solid waste collection and disposal practices ✓ Availability of waste bins and signage ✓ Records of waste disposal and Community complaints related to waste	Weekly
	Topsoil Management	Earthworks will impact the fertile	✓ Strip the topsoil to a depth of 15 cm and store in stockpiles of height not exceeding 2m.	Construction Contractor and Monitored by	✓ Topsoil stripping and storage practices	Weekly

Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
		topsoils that are enriched with nutrients required for plant growth or agricultural development.	✓ The stockpiles will be done in slopes of 2:1 to reduce surface runoff and enhance percolation through the mass of stored soil. ✓ Locate topsoil stockpiles in areas outside drainage lines and protect from erosion. ✓ The stored topsoil will be utilized for covering all disturbed area and along the proposed plantation sites ✓ Prior to the re-spreading of topsoil, the ground surface will be ripped to assist the bunding of the soil layers, water penetration and revegetation	Consultant of PIU and D&SC	✓ Condition of stored topsoil ✓ Loss of agricultural productivity near work sites	
	Road Works: Siltation / flow obstruction	**Low** impact may be generated	✓ Schedule in-stream activities away from monsoon period where practicable. ✓ Maintain baseflow via temporary pipes/bailey or diversion; install silt fence/sediment traps; no disposal of spoil into water bodies. ✓ Place stockpiles ≥30 m away from outfalls; promptly reinstate banks with turfing/riprap/bamboo piling.	Construction Contractor and Monitored by Consultant of PIU and D&SC	✓ Evidence of silt control measures ✓ Continuity of flow maintained ✓ Photo record at inlets/outlets	Weekly

Section	Main Environmental and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
4: Operational Phase	Road safety, dust from shoulders, and increased traffic	**Low** impact may be generated	✓ Ensure preventative road-safety measures: clear signage, speed humps near schools/markets, pedestrian crossings and markings. ✓ Routine sweeping/watering of shoulders in dry season; maintain vegetation/turfing.	Union Parishad and Upazila Parishad / LGED O&M	✓ Number of safety signs/humps installed ✓ Community complaint register ✓ Periodic road-safety awareness record	Quarterly basis
	Drainage maintenance / waterlogging	**Low** impact may be generated	✓ Regular inspections and desilting of side-drains and cross-drainage structures; vegetation control along drains; ensure inlets/outlets are kept clear.	LGED–UE/XEN; Union Parishad	✓ Maintenance log and cost ✓ Physical verification and site visit ✓ Photo record at roads	Quarterly basis
	Climate and disaster resilience of the corridor	**Low** impact may be generated	✓ Conduct periodic Road Safety Audit and incorporate corrective actions.	LGED–UE/XEN; PIU	✓ Post-monsoon inspection report ✓ RSA findings and closures	

Annex-4: Environmental and Social Management Plan (ESMP) of the Sub-project

ESMP for Access and Evacuation Roads: Rehabilitation of ≈ 16.60 km emergency-evacuation rural roads (HBB/RCC) in Satkania Upazila, Chattogram District (Package BSTRONG–LGED–CHA/ RD-7).

Project Stage	Potential Environmental & Social Impacts / Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	✓ No land acquisition is allowed within this sub-project activities; all works will remain within existing government right-of-way (ROW). ✓ Therefore, no direct impact on private land or physical assets is anticipated ✓ If any unanticipated impact on private land or assets is identified during detailed design or implementation, it will be addressed following the project RPF and ESMF, with appropriate consultation and compensation	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	✓ No negative impact expected. ✓ Local labor (including women) to get priority with equal pay. ✓ Workers' Code of Conduct to be signed and enforced.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholder engagement	✓ Consult all stakeholders before mobilization. ✓ Hold community consultations with potentially affected HHs. ✓ Inform host communities about project scope, timing and temporary traffic arrangements.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	✓ Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. ✓ In case of unavoidable circumstances, alternative access will be provided.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC

Project Stage	Potential Environmental & Social Impacts / Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Transportation and storage of construction materials (to traffic system and pedestrians, potential accidents to workers/ local people, generating dust and noise)	✓ Transportation of construction materials to the site will be carried out by covering the materials as a whole or covering the end part of iron-bar with plastic caps/ clothes/ sacks or drenching the sand while transporting. ✓ Store the materials in designated places, with proper fencing and coverings.	Contractor	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Sanitation and water supply for workers	✓ Separate male/female toilets, washing and hand-washing facilities. ✓ Potable water meeting standards with periodic quality checks. ✓ Routine cleaning and hygiene maintenance.	Contractor	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site selection / ecological sensitivity	✓ Locate yards and sheds outside drains or low-lying areas and away from schools or places of worship. ✓ No known elephant corridors in Satkania; if any sensitivity is identified, re-screen and apply night-work and speed restrictions. ✓ Avoid culturally or environmentally sensitive sites.	PIU	Environmental Consultant of PIU, PSC
Construction Stage	Dust generation	✓ 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 fluorescent manually and through water pipes. ✓ Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level	Contractor	Environmental Consultant of PIU, PSC
Construction Stage	Noise from construction activities	✓ Construction activities mostly will finish at daytime within 05 PM, and must confirm proper measures for ✓ avoiding any disturbance.	Contractor	Environmental Consultant of PIU, PSC

Project Stage	Potential Environmental & Social Impacts / Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		✓ All Personal Protective Equipment (PPEs) must be available at sites before starting any kinds of construction works.		
Construction Stage	Safety and security of workers and community	✓ Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem. ✓ Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staffs. ✓ Records of every training must be kept at site. ✓ All kinds of Child labor are completely prohibited in every site. ✓ Every construction materials storage site will be well fenced by Tin and safety caution tape.	Contractor	Environmental Consultant of PIU, PSC
Construction Stage	Traffic management and road safety	✓ 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 Executive Engineer. ✓ Local traffic police department should be contacted, if traffic problem becomes more complex.	Contractor	Environmental Consultant of PIU, PSC
Construction Stage	Conflicts over resource use (water, fuel etc.)	✓ A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC

Project Stage	Potential Environmental & Social Impacts / Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		✓ If ground water is withdrawn, adequate approvals from the appropriate department need to be collected before setting up bore wells.		
Construction Stage	Labor camp and ancillary facility risks (conflicts with local residents, GBV/SEA/SH, nuisance and pollution)	✓ All workers must sign and adhere to a Code of Conduct covering SEA/SH, GBV, child protection, non-discrimination, and respect for local customs. ✓ Organize regular awareness and tool box sessions on SEA/SH, GBV, child protection, prevention of harassment, drug abuse, and violence. ✓ Provide adequate lighting, separate sanitation/bathing facilities and safe drinking water for male and female workers in camps. ✓ Prepare and implement a **Camp and Ancillary Facilities Management Plan** addressing: o Collection and management of solid waste and wastewater; o Housekeeping and hygiene; o Control of noise, lighting and traffic from camp operations to avoid nuisance to nearby households; o Defined access routes to and from camps, integrated into the TMP/TCP. ✓ Maintain a confidential GRM for workers and community to report GBV/SEA/SH and camp-related issues; ensure anonymity and referral to local service providers where needed. ✓ Strictly prohibit disturbance to flora and fauna, hunting, poaching, tree felling, alcohol consumption, gambling or any anti-social activity within camp premises	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC

Project Stage	Potential Environmental & Social Impacts / Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Stage	Waste management (solid and hazardous)	✓ Contractor must prepare a site-specific Waste Management Plan following the ESMF guideline. ✓ Solid wastes shall be segregated at source, reused/recycled where possible, and transported for disposal to approved locations. ✓ Hazardous waste shall be stored in a bunded and labeled area and handed over to authorized waste handler with documented records. ✓ No discharge of waste, oil, or chemicals into drains, khals, or agricultural land; open burning is strictly prohibited. ✓ These provisions shall apply to all construction sites, labor camps and ancillary facilities.	Contractor	Environmental Consultant of PIU, PSC
Construction Stage	Topsoil and erosion control	✓ Topsoil up to 15 cm depth shall be stripped carefully and stored in bunded stockpiles not exceeding 2 m height. ✓ Stockpiles shall be maintained away from drainage lines and reused later for shoulder turfing and roadside plantation. ✓ No soil dumping shall occur on agricultural or low-lying land.	Contractor	Environmental Consultant of PIU, PSC
Construction Stage	Health & safety risks	✓ All workers shall receive orientation and regular training on heat stress, manual handling, electrical safety and use of PPE. ✓ First-aid kit, fire extinguishers and emergency contact numbers must be available at all sites. ✓ All construction equipment must have valid fitness certificates and be inspected periodically.	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC

Project Stage	Potential Environmental & Social Impacts / Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		✓ Contractor shall implement an Emergency Response Plan (ERP) covering evacuation, fire, and accident procedures. ✓ Records of training, inspection and drills must be preserved and reviewed during monitoring visits.		
Construction Stage	Accidents, fatalities and injuries to workers and community; inadequate support to victims	✓ Maintain valid workers' compensation insurance and **third-party liability insurance** covering injuries/fatalities and damage to third-party property; keep copies of policies at site. ✓ Implement a formal **Incident and Accident Reporting Procedure**: record all incidents (including near-misses) in an Incident Register; report serious and fatal incidents to PIU and PSC within the timeframe required by the ESMF and national law. ✓ Immediately arrange medical assistance and transport to the nearest health facility for any injured worker or community member. ✓ Coordinate with PIU to ensure appropriate follow-up support and facilitate compensation/insurance claims in line with national labor laws and project procedures. ✓ Analyze incident trends and implement corrective actions to prevent recurrence.	Contractor	Social Development Specialist and Environmental Consultant of PIU, PSC
Construction Stage	Damage to existing community infrastructure (local roads, drains, boundary walls, utilities)	✓ Before starting rehabilitation, carry out a joint pre-construction condition survey with PIU/UE and community representatives of adjacent roads, drains, roads, boundary walls and utilities, and maintain a signed photographic record. ✓ Maintain a Damage Register to record any damage to community assets resulting from construction activities or project traffic.	Contractor	Environmental Consultant and Social Development Specialist of PIU, PSC; Executive Engineer, LGED

Project Stage	Potential Environmental & Social Impacts / Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		✓ Repair or restore damaged assets to at least pre-project condition at the Contractor's cost; where repair is not feasible, provide compensation in line with the project ESMF/RPF and in consultation with affected persons. ✓ Coordinate with relevant utility providers (electricity, water, telecom) to avoid service disruptions and to undertake prompt repairs if required.		
Construction Stage	Odor and water pollution from latrines/sludge/wastewater	✓ All labor toilets and septic systems shall remain sealed, functional and regularly cleaned. ✓ Discharge of wastewater or sludge to nearby canals, drains or croplands is strictly prohibited. ✓ Collected sludge must be disposed of through an authorized FSM service provider as per DoE guidelines. ✓ Sanitation facilities shall be inspected and maintained weekly.	Contractor	Environmental Consultant of PIU and Union Parishad Member
Construction Stage	Demobilization of Construction Facilities	✓ After completion, all temporary camps, stockpiles and machinery must be cleared. ✓ Prepare a site-specific demobilization and waste-clearance plan. ✓ Restore all sites (including borrow areas, camps, storage areas) to pre-project or agreed condition; repair or compensate any community structures and public utilities damaged, based on the pre-construction condition survey and Damage Register. ✓ Follow Waste Management Plan principles during dismantling	Contractor	Environmental Consultant of PIU and Executive Engineer, LGED
Construction Stage	Labor and working conditions	✓ Workers shall receive training on occupational health and safety, rights, and code of conduct provisions.	Contractor	Environmental and Social Development

Project Stage	Potential Environmental & Social Impacts / Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		✓ A qualified Social Specialist shall be appointed at site to monitor labor welfare and GRM implementation. ✓ All workers must undergo periodic medical check-up and possess valid insurance coverage. ✓ Any incident or grievance related to labor conditions shall be recorded and resolved through project GRM within stipulated timeframe.		Consultant of PIU, PSC
Operation & Maintenance Stage	Road safety and community mobility	✓ Install and maintain road-safety signs, warning boards, reflective markers and speed limit signage along the corridor. ✓ Construct pedestrian crossings and speed breakers near schools, mosques, and market areas. ✓ Routine cleaning and desilting of side drains and roads shall be ensured by LGED maintenance unit. ✓ Outlet protection through turfing or riprap shall be maintained. ✓ Road markings and safety signage to be refreshed periodically. ✓ The project GRM shall remain active during the first 6–12 months after completion, and safety audits shall be carried out annually.	UE (under guidance of Executive Engineer, LGED Chattogram)	District Executive Engineer, LGED
Operation & Maintenance Stage	Noise, Vibration and Traffic Safety During Maintenance	✓ Maintain noise and vibration levels from maintenance equipment within standard limits. ✓ Schedule works in daytime; adequate lighting and caution signage required for night work. ✓ Periodic monitoring of machinery condition and use of PPE for workers.	UE (under guidance of Executive Engineer, LGED Chattogram)	UNO and PSC

Annex-4 (A): Environmental and Social Monitoring Plan (ESMoP)

The following monitoring plan sets out the specific indicators, verification methods, frequency, and responsibilities to ensure the effective implementation of the proposed environmental and social mitigation measures:

Monitoring Parameter	Key Indicators	Methods/Means of Verification	Frequency	Responsible Parties
Dust Suppression	No visible dust; frequency of water sprinkling (min 2 times/day).	Site inspection logs, photographs of water spraying.	Daily	Contractor / DSC
Noise Control	Machinery maintenance; strictly no work after 5:00 PM.	Noise level logs, community feedback records.	Weekly	Contractor / DSC
PPE Usage & OHS	100% workers wearing helmets, vests, and boots.	PPE inventory register, site observation checklists.	Daily	Contractor (SSO)
Waste Management	Presence of bins; no waste in drains or open burning.	Visual inspection, waste disposal, disposal records.	Weekly	Contractor / DSC
Drainage Condition	No waterlogging; drains clear of construction debris.	Site inspection reports and photographs.	Weekly	Contractor / LGED
GRM Cases	Complaint box availability; Resolution rate of grievances.	Grievance register review, meeting minutes.	Monthly	GRC / PIU
Traffic Safety	Presence of safety signage (in Bangla) and flagmen.	Traffic management inspection checklist.	Daily	Contractor
Sanitation & Water	Functional separate toilets; safe drinking water availability.	Hygiene inspection reports, water quality test reports.	Bi-weekly	Contractor / DSC

Waste Management Plan / Principles:

The contractor shall develop a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food waste, and organic waste) prior to commencing construction activities in Satkania Upazila and submit it to LGED PIU for approval. The plan must include the following principles and sequence of actions, to be implemented by the Contractor and supervised by the Field-level Environmental Specialist and Social Development Specialist of the Project:

- Preventing waste from throwing, leaching, or getting access to nearby water bodies must be ensured strictly by the contractor.
- Material storage sites or primary waste storage areas shall not be located closer than 10 m from any khal, drain, or stagnant water body.

- The quantity of waste materials shall be minimized by applying the 3R (Reduce, Recycle and Reuse) principle.
- Wastes shall be segregated accordingly and stored in designated fenced places/facilities at the sub-project site.
- Labor camps and construction sites shall be maintained in a clean, tidy, and safe condition.
- Adequate collection bins and temporary storage facilities shall be provided and maintained for all wastes prior to transportation to final disposal sites.
- Waste shall not be stored or piled on roadsides or at locations that could obstruct traffic movement, water runoff, or cause any public nuisance.
- Hazardous waste, such as waste oil or lubricants, shall be collected and stored in a paved and bunded area and subsequently handed over only to DoE-authorized recyclers.
- Records of quantities generated, stored, and transferred must be maintained by the contractor.
- Parts of construction debris (e.g., from dismantling of temporary sheds, stockpiles, or toilets) may be recycled or reused as filling material or driveway bedding wherever technically feasible.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner.
- The disposal method and site shall be selected considering environmental sensitivity and proximity to settlements so as to minimize disturbance.
- A proper waste-management chain shall be maintained.
- Collected waste shall be segregated by type, stored at a designated fenced area, and transported only to approved disposal sites under PIU supervision.
- Soil contaminated with bitumen, petroleum, or engine oil shall be removed from the site, stored in a safe container or lined pit, and disposed of at a designated hazardous-waste dump approved by PIU.
- Careful handling and supervision must be ensured to prevent further contamination.
- Organic wastes produced in the campsite during construction shall be collected and transported in covered vehicles or sealed bins to the designated disposal site.
- Burning of any type of waste in the camp or at construction locations is strictly prohibited.

Annex-5: Estimate for Environmental Mitigation, Social Safeguard, Occupational Health and Safety Related Items for Rural Road Emergency Evacuation works under B-STRONG, LGED

SL No.	Item Code	Description of Work	Unit	Total Quantity of Works	No of Item	Unit Rate (BDT)	Amount (BDT)	Remarks
1	1.01.01	**Site Office:** Erection and maintenance of semi - permanent site office and removal of the same after completion of work in accordance with the conditions of contract. In addition to the office required for own use, the contractor shall provide and maintain furnished site office for the use of Engineer-in-charge and his staff. The site office must have tiles floor, adequate foundation, brick walls, false ceiling of gypsum board and all windows are to be glazed, shuttered and provided with steel grill. Outside and inside wall surface are to be painted on plaster acceptable to the Engineer-in-charge. The site office shall be maintained in a secure condition by the contractor until the completion of the contract and shall be provided with electricity, water supply, washrooms and sewerage facilities. All doors shall be fitted with approved locks and windows shall be provided with screen/blinds. Before construction the contractor shall submit plans and drawings showing proposed details and location for the site office, including foundations, access roads, shades, layout of electrical and water supply and hard standings there for the approval of Engineer-in-charge. The Engineer-in-charge may require revision of the plans prior to giving approval for construction. The	job	1.000	8	51705.44	413,643.52	1 Site office for each

SL No.	Item Code	Description of Work	Unit	Total Quantity of Works	No of Item	Unit Rate (BDT)	Amount (BDT)	Remarks
		contractor shall also submit detailed proposed furniture, fittings and other items of equipment and plant to the Engineer-in-charge for approval. These items shall be of the standard quality suitable for site. The office, complete with furnishings, fittings, access roads and No of Item hard standings shall be ready for occupation by the Engineer-in-charge within 28 days of the date when the contractor first occupies the site. The contractor shall provide day and night guards and an attendant for the field office. At the end of the contract all materials, equipment and plant, furniture, fittings recovered from dismantling the office and removing access road will be the property of the contractor. No interim payment shall be certified unless engineer's office with required facilities are constructed and accepted by the Engineer-in-charge. (This is a time related item; proportionate payment for this item shall be made distributing in each bill on the basis of percentage progress of the whole works under contract) Engineer's site office of minimum 15 sqm plinth area with providing necessary facilities including office furniture, consumables, stationeries, water purifier etc. [PWD 01.1.2] and also used as labor shed.						
2	1.02	**Project Profile Signboard:** Providing and fixing of typical project profile signboard as per direction of	sqm	2.160	8	17,293.32	298,828.5696	1 Signboard for each site

SL No.	Item Code	Description of Work	Unit	Total Quantity of Works	No of Item	Unit Rate (BDT)	Amount (BDT)	Remarks
		E-I-C, to be placed at a suitable place of the site including submission of proposals for the materials & size of the signboards (recommended size: 1800mm x 1200 mm with 2 nos. 75mm dia. MS post, outer & inner frames of board shall be 50mm x 50mm x 5mm & 25mm x 25mm x 5 mm respectively) and text layout to the engineer for approval which will be positioned as directed by the engineer and removing the same on completion of the works or as instructed by the E-I-C. Sheeting will be made of encapsulated lens with retro-reflective type and messages/ borders will be screen printed. The text shall mention among others the name of the project, name of the implementing agency, cost of the project, completion time, name of the contractor etc.						
3	1.03	**Supplying and providing of first aid box:** Supplying and providing of first aid box with necessary materials/medicine (hygienic gown, thermometer, adhesive dressings, antiseptic solutions, bandages, cotton balls or swaps, emergency blanket, gloves, hand sanitizer, ice pack, saline etc). All complete as per direction of Engineer-in -charge. [PWD 01.1.4.3]	LS	1.000	8	16,665.42	133,323.36	1 First Aid Box for each site

SL No.	Item Code	Description of Work	Unit	Total Quantity of Works	No of Item	Unit Rate (BDT)	Amount (BDT)	Remarks
4	1.13	**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	LS	2.000	8	13,241.67	211,866.72	2 nos. at each site -one for male and other for female
5	1.14	**Traffic Management:** 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, unless specified otherwise, including keeping provision for existing traffic and pedestrian movements in such a way as to assure that a single lane at least 3.0m wide is available for public traffic at all times (including access to properties and local roads) affected by the contractor's activities shall be maintained at all times (day & night), including removal of all temporary constructions on completion of the activities, etc. all complete as per requirement and	LS	1.000	8	25,000.00	200,000	1 for each site

SL No.	Item Code	Description of Work	Unit	Total Quantity of Works	No of Item	Unit Rate (BDT)	Amount (BDT)	Remarks
		instruction of Engineer-in-charge. All relevant accessories and arrangements under this item shall be property of the contractor and payment will be made after 100% completion of the contract successfully.						
6	14.02.03	**Waste Disposal Facilities:** Providing, installing and maintaining at least 2 (two) nos. waste collection bins one for organic waste and other for inorganic waste of minimum capacity of 30liters with hinge supported 450mm dia cover plate for opening, made of durable plastic material at worksite, both bins will be kept in a safe and easily accessible place, so that will easy to use and no adverse impact will generate on the surrounding environment, including continuing the full functioning of waste disposal(buried/incineration) in accordance with the full satisfaction of the project manager throughout the contract period, all complete as per drawing, specification and direction of the Engineer-in-charge. Entire relevant accessories and arrangements under this item shall be property of the contractor and payment will be made after 100% completion of the contract successfully.	LS	2.000	8	5,000.00	80,000	2 nos. at each site -one for organic and other for inorganic waste
7	14.05.01	**Personal Protection Equipment for Workers:** Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and	LS	20.000	8	5,000.00	800,000	20 nos. for each site

SL No.	Item Code	Description of Work	Unit	Total Quantity of Works	No of Item	Unit Rate (BDT)	Amount (BDT)	Remarks
		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 for construction workers made of 100% polyester waterproof fabric, fluorescent yellow/orange/green/red/blue or pantone color, (ii) suitable hand protection gloves for construction work of Flexible/ durable/ excellent puncture resistance working gloves with PVC palm and T/C drill back, pasted cuff, palm liner and fit properly and be reasonably comfortable to wear, (iii) appropriate foot protection shoes having impact-resistant toes and heat-resistant soles that will protect the feet against hot working surfaces, (iv) best quality safety helmets of ABS shell, tough, lightweight, durable which will be able to resist penetration by objects, absorb the shock of a blow and water-resistant and slow burning with available four-six-point adjustable suspension for shock-absorbing, slotted sides to accommodate accessories, such as face shields, ear muffs (v) suitable eye protection goggles to protect against specific workplace hazards, fit properly and be reasonably comfortable to wear, provide unrestricted vision and movement, including instructing workers to wear strictly during working time and reviewing periodically, updating,						

SL No.	Item Code	Description of Work	Unit	Total Quantity of Works	No of Item	Unit Rate (BDT)	Amount (BDT)	Remarks
		evaluating the effectiveness of PPE and maintaining, replacing worn or damaged PPE etc. all complete as per requirement and full satisfaction of Engineer-in-charge. Payment will be made after 100% completion of the contract successfully.						
8	1.01.02.02	**Tree Plantation:** Tree Plantation to compensate the effect of deforestation and enhance the ecological condition in the subproject area-preferably local fruits, flowers, medicinal and ornamental trees-Mango, Jackfruit,am, Kathbadam, Chalta, Krisnachura, Bokul, arul, Polash, Kadom, Shimul, Neem, Arjun, Amloki, Haritaki, Bohera, Mahogony, Palm Tree, Chambal, Rain Tree, Shil Koroi, Satim, Sishu (including protection, fencing and conservation up to project defect liability period), preferably at both sides of road where space is available (fencing as per LGED rate schedule item no-5.26.14, contractors will also be instructed by the Consultant and PIU prior to the tree plantation work) at an interval of 10 feet.	no	200.00	16.60	200.00	664,000	200 nos. for 1km road
9	14.03.01	**Control of Water Pollution:** Providing necessary arrangement to prevent entrance, or accidental spillage, solid matter, contaminants, debris, garbage, cement, concrete, sanitary waste, oil, other petroleum products, pollutants and wastewaters from aggregate processing, concrete batching, or other construction operations into streams, flowing or dry	LS	1	16.60	10000	166,000	1 no. Per km

SL No.	Item Code	Description of Work	Unit	Total Quantity of Works	No of Item	Unit Rate (BDT)	Amount (BDT)	Remarks
		watercourses, lakes, and underground water sources for ensuring water quality. Including monitoring pH value, dissolved oxygen (DO), biochemical oxygen demand (BOD), chemical oxygen demand (COD), total dissolved solids (TDS), etc. Concerned tests to be carried out three times (before, during and end of physical work) from any laboratories approved by PM.						
10	14.03.02	**Control of Air Pollution (Dust Suppression):** Maintaining, carrying out proper and efficient measures wherever and as often as necessary to reduce dust nuisance, and to prevent dust which has originated from contractor's activities/ operations at the worksite and site office. Including sprinkling water on aggregates/unpaved roads at least three times a day or more depending on the atmospheric conditions. Including keeping necessary covering/protection on stockpiled fine aggregates to reduce dust nuisance during natural air blowing. Emission of dust into the atmosphere shall be strictly controlled and methods/equipment used for collection and disposal of dust. Carrying out air quality test as PM10, PM2.5, SPM, NOx, SOx as per instruction of Engineer-in-charge	LS	1	16.60	30000	498,000	1 no. Per km
11	14.03.03	**Control of Soil Pollution:** Providing appropriate controlling measures to prevent	LS	1	16.60	5000	83,000	Per km

SL No.	Item Code	Description of Work	Unit	Total Quantity of Works	No of Item	Unit Rate (BDT)	Amount (BDT)	Remarks
		entrance, or accidental spillage, solid matter, contaminants, debris, garbage, cement, concrete, sanitary waste, oil, other petroleum products and wastes into soil to avoid soil pollution at worksite. To evade emission of high concentration of sediments into wetlands, swampy areas and other particular sensitive areas						
		Drinking Water Facilities: Complete development of the tube well by air compressor and pump of suitable capacity by alternate surging and pumping or any specified method until satisfactory yield is achieved in sand and turbid free water confirmed by laboratory test using necessary quantity of cologne and conducting step drawn-down test before and after the development as per specification and accepted by the Engineer-in-charge. (Development should be started within 24 hours of completion of shrouding) Wells up to 200 m depth (PWD BW 27.13.1)	LS		8	32158.14	257,265.12	1 for each site
			Total Scheme Amount:			**3,805,927.2896**		

Annex-6: Pictorial View of the Sub-Project sites at different chainage

Overview of surrounding features of the Sub-Project

Road ID: 415822006 – Dewan Hat GC- Tayari Hat GC (Lohagora) Satkania Portion, Satkania- Chattogram

Road ID: 415824074 – Uttar Sadaha Mantala Road, Satkania- Chattogram

Road ID: 415824225 – Neta Fakir Para (West Side)- Adarsha Gram Road, Satkania - Chattogram

Road ID: 415822007 – Nalua- Satkania Road via Nalua Hadar Khal Bridge at 1.0 km & Gatiadanga High School (Satkania- Chattogram)

Road ID: 415823004 – Satkania UP – Tayari Hat Bazar GC (Lohagora) Road, Satkania- Chattogram

Road ID: 415824032 – Eochia Chara Embt. Road, Satkania- Chattogram

Road ID: 415823005 – Paschim Dhemsha UPC – Chowdhury Hat via Anufakir Dokan Road, Satkania- Chattogram

Road ID: 415824049 – Chib Bari School – Choto Barodona GPS Road (Sha Monsuria Road), Satkania- Chattogram