GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

Local Government Engineering Department (LGED)

Local Government Division

Ministry of Local Government, Rural Development and Cooperatives

ENVIRONMENTAL AND SOCIAL ASSESSMENT (ESA) REPORT FOR

Package No: RUTDP/CHN/ 2024-25/W-01
at
Chapai Nawabganj Pourashava, Chapai Nawabganj

Resilient Urban and Territorial Development Project (RUTDP)

Design, Supervision, and Management (DSM) Consultancy Services

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Joint Venture with

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Dev Consultants Limited (DEVCON), Bangladesh;
Design, Planning & Management Consultants Ltd. (DPM), Bangladesh

SUMMARY OF ESA REPORT
Resilient Urban and Territorial Development Project (RUTDP)
Package No: RUTDP/CHN/2024-25/W-01 at Chapai Nawabganj Pourashava, Chapai Nawabganj

1. Introduction

The **Chapai Nawabganj Pourashava**, an "A"-grade municipality covering 24.6 km² with a population of about 314,101 (BBS 2022), is facing challenges from rapid urbanization and deteriorating infrastructure. Under the RUTDP, this subproject involves **rehabilitation and replacement of bituminous carpeting (BC) roads and construction of RCC drains, footpaths, and streetlights**.

The **objectives** of the ESA are to assess existing environmental and social conditions, identify potential impacts from project activities, and formulate mitigation and enhancement measures through a comprehensive **Environmental and Social Management Plan (ESMP)**.

Methodology involved (i) desktop review of existing data and legislation; (ii) field investigations with site visits, stakeholder interviews, and photography; and (iii) data analysis to prepare baseline conditions, impact assessment, and management plans.

2. Subproject Description

Location and Scope

The subproject is located in Wards 2, 4, 8, 9 and 15 **of Chapai Nawabganj Pourashava and includes approximately** 3.78 km of BC roads with matching RCC drains and streetlights**. The major roads include the stretch from** Hospital More – Puraton Bazar – Adhirer More via Santir More and Bottola Hat More.

Existing Conditions and Rationale

The current roads are narrow, damaged, and waterlogged **with inadequate drainage. During monsoon,** heavy rainfall and tidal influences **cause storm-water stagnation, damaging roads and hampering livelihoods. The absence of** footpaths and streetlights **also poses safety risks. The proposed rehabilitation will improve mobility, reduce water logging, enhance urban aesthetics, and promote safer pedestrian movement.**

Justification

The subproject was prioritized through the **Capital Investment Plan (CIP)** and feasibility study by the DSM team. It requires **no private land acquisition**, and all works will occur on Pourashava land. Approximately **174,000 residents** in the surrounding wards will benefit directly, with improved business, transportation, and employment opportunities.

Key Activities and Materials

Main construction involves **dismantling damaged pavements**, **earthwork**, **sand filling**, **RCC construction**, and **streetlight installation**. Equipment includes excavators, rollers, mixers,

compactors, and asphalt plants. Materials include soil, sand, aggregates, bitumen, concrete, reinforcement, and electrical fittings.

Risk Categorization

- **As per ECR 2023:** Orange category (road & drain); Green (streetlight).
- **As per World Bank ESF:** *Moderate risk subproject*.
  Hence, a detailed ESIA is not required; the ESA with ESMP is sufficient for implementation.

3. Baseline Environmental Conditions

Physical Environment

- **Geology & Soils:** Lies in the **north-western Bengal Basin**, with alluvial floodplain and Dupi Tila sand formations. The area is **flat (avg. 26 m ASL)** and falls in **earthquake Zone III**.
- **Climate: Tropical monsoon**; annual rainfall ≈ 1477 mm, highest in July. Average annual temperature 25.8 °C (max ≈ 34 °C in April; min ≈ 17 °C in January).
- **Hydrology:** Drained mainly by **Mahananda River**; groundwater 5–12 m deep, suitable for drinking; minimal salinity.
- **Flooding & Drainage:** Periodic **waterlogging** from poor drainage; natural outfall toward the Mahananda River.
- **Air & Noise:** Generally acceptable; minor dust and vehicular noise in bazar areas.
- **Solid Waste:** Managed by Pourashava's **Dariapur dumping site** (Ward 9)

Biotic Environment

- **Flora:** Dominated by cultivated species—**mango, jackfruit, litchi, guava, bamboo**, and native trees like neem and rain tree.
- **Fauna:** Small mammals (jackal, jungle cat, rodents), birds (myna, magpie-robin, crows), reptiles, amphibians, and freshwater fish in local ponds and rivers.

Socio-Economic Environment

- Land Use: **Densely built-up residential-commercial mix.**
- **Population:** Direct beneficiaries ≈ 17,400 persons; literacy ≈ 85% (higher than national average).
- **Livelihood:** Mixed occupations—small business, farming, service, and labor.
- **Cultural Heritage:** No archaeological or heritage sites.
- **Resettlement:** No land acquisition; minor voluntary removal of structures if required; agreements obtained following **RPF guidelines**

4. Environmental and Social Impacts, Mitigation & Enhancement

Risk Assessment Summary

The subproject has **manageable, site-specific impacts** with **moderate overall risk**. Construction impacts are short-term; operational impacts are minor.

Key Negative Impacts

1. **Dust and Air Pollution:** from earthworks and material transport.
2. **Noise and Vibration:** from equipment use and traffic diversion.
3. **Water Contamination:** from runoff, waste disposal, or oil leakage.
4. **Tree Felling:** 27 roadside trees to be cut.
5. **Occupational Health & Safety (OHS):** exposure to sun, dust, traffic, and machinery hazards.
6. **Waste Generation:** construction debris, oil residues, and domestic waste from labor sheds.
7. **Community Risks:** temporary traffic congestion and risk of minor accidents.

Mitigation Measures

- Regular **water sprinkling**, **covered material transport**, and **dust suppression**.
- All machinery to have **mufflers**; work only during daytime.
- **Waste** to be disposed at **Dariapur dumping site**.

- **Tree-planting program**: 150 trees (local species – mango, neem, rain tree, etc.) with bamboo fencing, spacing 3 m, and maintenance during the defect-liability period.
- **Personal Protective Equipment (PPE)** for all workers; provision of **first aid**, clean water, and sanitary facilities.
- **Traffic management plan** with signage and local consultation.
- **Community engagement** through continued liaison and grievance redress.

Positive Impacts

- Improved **transportation and drainage**, reducing flood risk.
- Enhanced **night-time safety** through streetlighting.
- Increased **economic activity** and **employment** during and after construction.
- **Aesthetic enhancement** of the urban environment and reduction in waterlogging.

Public Consultation

Focus group discussions and stakeholder meetings indicated strong **community support**. Participants emphasized timely work, proper waste management, road safety, and inclusion of local labor. The feedback informed final mitigation plans.

a. Environmental and Social Management Plan (ESMP)

i. Institutional Arrangement

Implementation will follow a tiered structure:

- **PMU-RUTDP (LGED)** – overall coordination.
- **PIU (Pourashava)** – site supervision and reporting.
- **DSM Consultants** – technical and ES compliance monitoring.
- **Contractor** – implementation of ESMP and site safety.

ii. Key ESMP Components

- **Construction Phase:** Dust control, waste management, OHS compliance, community safety, and tree plantation.
- **Operation Phase:** Drain cleaning, waste disposal, maintenance of streetlights, and monitoring of air/noise quality.
- **Monitoring:** Regular site inspections, visual observations, and analytical monitoring for air, noise, and water quality.
- **Capacity Building:** Training for Pourashava engineers and contractors on ES compliance.
- **Grievance Redress Mechanism (GRM):** Three-tier system (community → Pourashava → PMU) to resolve issues within specified time.

iii. Budget

A dedicated **Environmental and Social Management Budget** is incorporated in the Bill of Quantities (BOQ) to cover mitigation, monitoring, and capacity-building costs

5. Conclusions and Recommendations

The ESA concludes that the **RUTDP/CHN/2024-25/W-01** subproject poses **moderate environmental and social risk**. The impacts are **localized, temporary, and reversible**, and can be effectively mitigated through the proposed ESMP.

Key Recommendations

1. Implement the **mitigation measures** strictly through contractor supervision.
2. Ensure **tree plantation** survival and maintenance during operation.
3. Conduct **regular environmental monitoring** and maintain records.
4. Maintain active **public consultation** and responsive grievance redress.
5. Integrate **climate resilience** and safety considerations in design (proper slope, durable materials).

On completion, the subproject will **significantly improve urban mobility, drainage capacity, environmental quality, and social wellbeing** in Chapai Nawabganj Pourashava, contributing to the overall goals of **RUTDP** in building a **resilient, sustainable, and inclusive urban infrastructure**