Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Cooperatives
Local Government Division

Improving Urban Governance and Infrastructure Program (IUGIP)

INITIAL ENVIRONMENTAL EXAMINATION

Sub-Project No: IUGIP/CHAR/UT+DR/03/2023

CHARGHAT POURASHAVA

FEBRUARY 2026

Prepared by: MDS Consultants

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ABBREVIATIONS

ADB	-	Asian Development Bank
AFD	-	Agence Francaise de Developpment
AP	-	Affective Person
DoE	-	Department of Environment
DLI	-	Disbursement Link Indicator
ECA	-	Environmental Conservation Act
ECC	-	Environmental Clearance Certificate
ECR	-	Environmental Conservation Rules
EIA	-	Environmental Impact Assessment
EMP	-	Environmental Management Plan
ESMF	-	Environmental and Social Management Framework FD
GoB	-	Government of Bangladesh
GRC	-	Grievance Redressal Cell
GRM	-	Grievance Redress Mechanism
IEE	-	Initial Environmental Examination
IUGIP	-	Improving Urban Governance and Infrastructure Program LCC
LGED	-	Local Government Engineering Department
MDSC	-	Management Design and Supervision Consultant MLGRDC
O&M	-	Operation and Maintenance
PMU	-	Project Management Unit
PPTA	-	Project Preparatory Technical Assistance PRSP
RBL	-	Result-Based Lending
RP	-	Resettlement Plan
SMP	-	Spoil Management Plan
SPS	-	Safeguard Policy Statement
ToR	-	Terms of Reference
UGIAP	-	Urban Governance Implementation Action Plan

GLOSSARY OF BANGLADESHI TERMS

Crore	-	10 Million (= 100 Lakh)
Ghat	-	Boat Landing Station
Hartal	-	Nationwide Strike/Demonstration Called By Opposition Parties Khal
Khas, khash	-	Belongs To Government (E.G., Land)
Katcha	-	Poor Quality, Poorly Built
Lakh, lac	-	100,000
Madrasha	-	Islamic College
Mouza	-	Government-Recognized Land Area
Parishad	-	Authority (Pourashava)
Pourashava	-	Municipality
Pucca	-	Good Quality, Well Built, Solid
Thana	-	Police Station
Upazila	-	Sub District
Crore	-	10 Million (= 100 Lakh)

WEIGHTS AND MEASURES

ha	-	hectare
km	-	kilometre
m	-	meter
mm	-	millimetre

NOTES:

(i) In this report, "$" refers to US dollars.

(ii) BDT refers to Bangladeshi Taka

For Jan 03, 2026: 1 $= 122.70 BDT; 1 BDT= 0.00815 $

PREFACE

The premises of this Initial Environmental Examination Report (IEE) are the MDS Consultant services presentation of an analysis of data and conclusions, together with its appendices. While MDS Consultants have been deputed to assist the Pourashava / Executing Agency (EA) for the preparation of the IEE, the responsibility and ownership of the IEE rest with the EA. The key elements of the IEE Report focus on: Assessment of Compliance Guidelines of Environment Safeguards according to ADB, AFD and GoB policy.

DISCLAIMER

This Initial Environmental Examination (IEE) Report of Charghat Pourashava, Under Management Design & Supervision Consultants for Improving Urban Governance and Infrastructure Program (IUGIP) based on Result based lending (RBL). All the data used to prepare this Initial Environmentalss Examination (IEE) Report have been collected from the Pourashava Development Plan (PDP). Some of the information's have also been collected from the Pourashava personnel over telephone. Moreover, some information's have been collected by the respective experts of MDS consultant through intensive field visit which have been used in writing this report. If any information or data or any other things coincide with other project documents that are beyond our knowledge and fully coincidental event and we ex-press apology for that.

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EXECUTIVE SUMMARY

1. The Government of Bangladesh (GoB) has undertaken the Improving Urban Governance and Infrastructure Program (IUGIP) with financial assistance from the Asian Development Bank (ADB) & Agence Francaise De-developpment (AFD). The Improving Urban Governance and Infrastructure Program (IUGIP) under the Result Based Lending (RBL) modality will cover 88 Pourashavas.
2. The implementation of the IUGIP, RBL program which will involve construction of infrastructure facilities such as drains, roads, water supply infrastructure (water hand pumps and /or bore wells), low-income neighborhoods upgradation, toilet blocks, footpath, tree plantation, improvement in market areas and the potential construction work will cause environmental and involuntary resettlement impacts.
3. Environmental and Social Management Framework (ESMF) was prepared and endorsed by both the funding agencies and GoB to be adopted for implementation of the IUGIP. The frameworks specified the screening procedures and the guidelines for identifying the APs, estimating the compensation and assistance to be paid for the losses, grievance redress mechanism, preparation of IEE and the institutional requirements for monitoring the implementation of environmental safeguard aspects of the project. The IEE for roads & drains sub-project of Charghat Pourashava has been prepared following the PPTA and updated format.
4. **Environment Impacts and Risks**: Lessons drawn from five sample Pourashava program due diligence conducted during program safeguard systems assessment (PSSA) indicates that the RBL Program activities are unlikely to have in-significant adverse impacts. Potential impacts are mainly related to construction and are short-term, limited extent, localized and can be mitigated with good construction practices and measures. This is because the proposed RBL program activities are of small scale and located in and around urban areas. Program towns are characterized with centrally dense localities with narrow roads and medium to low dense outer areas. There are trees along the wider and outer roads and water bodies (canals, rivers/streams, ponds and fishponds, etc.) that may be impacted. Groundwater, especially shallow waters, is contaminated with arsenic in several areas. Potential location/design impacts may arise from: tree cutting, disturbance to natural drainage, use of shallow groundwater as the water source, and potential groundwater contamination from seepage of toilets. Discharge of wastewater into storm water drains will degrade the water quality of receiving water bodies, affecting their usage, if any, and shall be prevented. Proper planning and design can avoid these impacts. Dismantling existing buildings/ market blocks to build new market centers shall ensure no damage to structures, if any, with heritage value. There is always a potential risk of dismantling asbestos-containing materials (ACMs) if such materials are present in existing buildings. Risk screening and measures need to be undertaken to mitigate risks if any. Any structures with religious activities shall be avoided or impact mitigated in prior consultation with affected communities. Availability of proper approach roads to market centers and roads & drains shall be ensured to avoid traffic congestion during operation.
5. Government of Bangladesh (GoB) law and ADB policy require that the environmental impacts of development projects be identified and assessed as part of the planning and design process, and that action be taken to reduce those impacts to acceptable levels. This is done through the screening/impact assessment process, which has become an integral part of all ADB lending operations, project development and implementation.

Policy, Legal and Administrative Framework

6. The ADB has categorized IUGIP projects as Category B and following its normal procedure has determined that an IEE will be conducted for each Pourashava sub-project submission. The impacts of sub-projects will be assessed according to ADB Environment Policy (2002, 2009) and Environmental Assessment Guidelines (2003).
7. Category as per revised ECR, 2023 section-1 of the 2023 ECR provides a classification of projects into four categories, depending on environmental impact and location. These

categories are; Green, Yellow, Orange and Red. Based on projects listed in section-1 to the ECR Rules, 2023, roads and drains activities proposed in RBL fall under the ambit of this legislation requiring of ECC do not require and red category projects are not eligible for implementation under RBL Table 4.

8. For the RBL program, eligible sub-projects will mostly be classified as Category B per ESMF and not applicable based on ECR, 2023. This activities/sub T projects will require an initial environmental examination (IEE) report including an environmental management plan (EMP). Sub-projects classified as Category C (ADB SPS) will not require an environmental assessment, but environmental implications will be reviewed, and an environmental due diligence report will be prepared.
9. The DoE has issued a letter for Improving Urban Governance and Infrastructure Program (IUGIP), vide letter 22.02.0000.018.72.029.23.177 dated 25.06.2023. (DoE approved of Letter Appendix -9).
10. The objectives of the sub-project are (i) the sub-project will facilitate the local people smooth communication and reduce water logging, traffic jam in proposed location.

Sub-project Description

11. The proposed roads & drains sub-project package are IUGIP/CHAR/UT+DR/03/2023. Improvement/Construction of Roads 1755.00m in 02 locations, RCC Drain 3392.00m in 05 locations and Installation of 60 nos Street Light & 100 nos Tree plantation with EMP at Charghat Pourashava, Rajshahi District.

Environmental Safeguard Policy Principal Triggered

12. The environmental and indigenous peoples' safeguards principles likely to be triggered due to the RBL program activities are given in Table 1. Summary of Government of Bangladesh environmental and safeguard regulatory framework and a comparative analysis with ADB policy principles is presented in national legislations.
13. **Indigenous Peoples Safeguards, ADB Safeguard Policy Statement, 2009. If incase**; The Indigenous Peoples safeguards are triggered if a project directly or indirectly affects the dignity, human rights, livelihood systems, or culture of Indigenous Peoples or affects the territories or natural or cultural resources that Indigenous Peoples own, use, occupy, or claim as an ancestral domain or asset. ADB SPS, 2009 uses the term Indigenous Peoples in a generic sense to refer to a distinct, vulnerable, social, and cultural group possessing the following characteristics in varying degrees:
    - self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
    - collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
    - customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and
    - a distinct language, often different from the official language of the country or region.

Table 1: Environment Safeguard Policy Principal Triggered

Principles*	Triggered by the RBL program	Descriptions
Environment safeguard		
Principle 1: project screening process	Yes	Potential environmental impacts of proposed RBL activities are likely to be minimal, Screening will be under taken to including following activities:(i) classified as **Category B** and requiring IEE study under ADB SPS, (ii) those classified as 'Not specified' category and no requiring IEE study under GoB revised ECR 2023. A screening form, combining both ADB and ECR requirements, will be introduced.
Principle 2: Conduct of environmental assessment	Yes	The environmental impacts of RBL activities during construction and operation needs to be assessed through conduct of environmental assessment. Per ADB SPS, some RBL activities fall under Orange-B category, requiring an IEE. As per ECR 2023, do not need IEE or EIA. A process/framework will be introduced that all RBL activities go through environmental assessment.
Principle 3: Examine alternatives to the project	Yes	RBL activities are simple and straight forward with minimal impacts. Examination of alternatives will further reduce the impacts in aspects like avoiding locations with trees, water bodies, arsenic contaminated water as water source, etc.,
Principle 4: Avoid, minimize, mitigate, and/or offset adverse impacts	Yes	Program activities will require mitigation measures to address environmental impacts. EMP will be required as part of the IEE. EMP will need to clarify implementation arrangements and costs.
Principle 5: Carry out meaningful consultation	Yes	Consultations will be required with the affected persons and stakeholders during the project preparation and implementation. Public feedback and grievance redress system is crucial for avoiding / reducing inconveniences and health and safety risks during construction.
Principle 6: Disclose a draft environmental assessment (including the EMP)	Yes	Disclosure of documents is required to update the affected people and stakeholders on the proposed RBL activities, likely impacts, and mitigation and monitoring measures, and implementation arrangements. IEEs, including EMPs, and monitoring reports during implementation will be disclosed.
Principle 7: Implement EMP and monitor its effectiveness	Yes	Implementation of EMPs and monitoring effectiveness, reporting and disclosure is needed. Contractors will implement the EMPs, and LGED will monitor report and disclose. Budget to implement EMP Will be included in the project cost.
Principle 8: Avoidance of critical habitats	No	The RBL program activities will be mostly confined to urban areas. No activities will be located in or near critical habitats**.**

Principles*	Triggered by the RBL program	Descriptions
Principle 9: Apply pollution prevention and control technologies and practices	Yes	Given the small-scale of construction activities, the potential for pollution is minimal, and is mostly confined to construction phase environment, health and safety impacts. RBL activities will need to be implemented applying government pollution control and EHS requirements, and World Bank Group's EHS guidelines. RBL activities unlikely to use or generate any notable hazardous materials or waste.
Principle 10: Workers' health and safety	Yes	RBL activities involve construction and operation of infrastructure. Health and safety risks are inherent to civil works, both to workers, and surrounding community, especially since the works will be conducted in public areas
Principle 11: Conserve physical cultural resources	Yes	RBL program activities will not be implemented in or close to archeologically, historically sensitive sites. There may however be local religious/cultural places within the town and along the roads where infrastructure will be located. Necessary measures avoid any impacts, including chance-find Procedures will be included in EMPs
Principle 1: Project screening for Indigenous Peoples impacts.	Yes	All components or activities will be screened to determine whether any Indigenous Peoples/ TMRES communities are present and affected by the RBL program.
Principle 2: Undertake a culturally appropriate and gender-sensitive social impact assessment	No	There have a small group of TMRES live in the Pourashava. There will be no environmental impact during construction by IUGIP.
Principle 3: Undertake meaningful consultations with affected Indigenous Peoples communities and establish a culturally appropriate and gender inclusive grievance mechanism	No	For any activity or component is undertaken in Pourashvas, where TMRESC (Indigenous Peoples) live in a cluster or small groups, consultations will be carried out to ensure that the RBL program benefits are accessible to Indigenous Peoples/ TMRES communities in a culturally appropriate manner.
Principle 4: Broad community support for project activities	No	The RBL program will not take up any activity, which may cause the commercial development of the cultural or natural resources or traditional or customary lands.
Principle 5: Avoid, to the maximum extent possible, any restricted access to and physical displacement from protected areas and natural resources.	No	The RBL program will exclude any such activity.
Principle 6: Preparation of IPP	No	No adverse impacts to Indigenous Peoples/TMRESC assess under the RBL program; only affected group are impact assessed on Indigenous Peoples/ TMRESC in the Pourashava. The TMRESC Plan will be prepared, which will

Principles*	Triggered by the RBL program	Descriptions
		include a specific action plan for consultation and participation of indigenous peoples.
Principle 7: Disclose a draft and final IPP in form and language(s) understandable to affected Indigenous Peoples communities	No	Any Resettlement and TMRESC Plan prepared will be disclosed on LGED website and to TMRESC in language understood by them.
Principle 8: Prepare an action plan for legal recognition of customary rights to lands and territories or ancestral domains.	No	The customary rights to lands and territories or ancestral domains will not be impacted under the program.
Principle 9: Monitor implementation of the IPP and disclosure of monitoring reports.	Yes	The monitoring of the Indigenous Peoples related actions and measures will be conducted during the implementation of the RBL program by LGED.

EIA = environmental impact assessment, IEE = initial environmental examination, EHS = environmental, health and safety, IPP = indigenous people's plan, LGED = Local Government Engineering Department, PSSA = program safeguard systems assessment, RBL = results-based lending, TMRESC = Tribes, Minor Races, Ethnic Sects and Communities. Source: Asian Development Bank, Safeguard Policy Statement, 2009.

14. There is no impact on indigenous people as there are no indigenous people around the sub-project site.
15. **Institutional Capacity and Implementation Practices.** LGED, the executing agency/implementing agency for the RBL Program, has significant experience in implementing multilateral funded projects. LGED has been implementing ADB & AFD funded Improving Urban Governance and Infrastructure Program (IUGIP) are under implementation. LGED demonstrated its capacity to prepare, implement, monitor, and report projects in compliance with the ADB SPS and GOB regulatory framework.[1] In its current set up, LGED established separate project management units (PMU) headed by project directors to implement IUGIP. Since the RBL program is continuation of IUGIP, the existing PMU of IUGIP will implement RBL Program. PMU is supported by project implementation units (PIUs), established in each Pourashava, and consultants. Contractors will be appointed to build the infrastructure. LGED's district level offices will also support PIUs. This position is currently vacant, and a Senior Assistant Engineer is given additional charge to handle safeguards. In each PIU, an assistant engineer, on an additional charge, is responsible for safeguards.
16. Local Government Engineering Department (LGED) only the executing agency (EA). LGED is responsible for providing support and guidance to Pourashavas concerning performance criteria and Pourashava development planning. However, LGED is the main executing agency and responsible for the implementation activities by establishing a PMU. The participating Pourashavas are implementing agencies, with a Project Implementation Unit (PIU) within the Pourashava existing structure. Consultant teams are responsible for (i) detailed engineering design, contract documents preparation and safeguards facilitation; (ii) project management and administration support; (iii) assistance in supervising construction;

[1] No Red category activities are eligible for funding in RBL

(iv) strengthening of local governance, conducting required studies & (v) awareness raising on behavioral change in water, sanitation & solid waste management activities.

17. **Description of the Environment:** Sub-project components are located in Charghat Pourashava urban area or in its immediate surroundings which were converted into urban land use for many years ago, and there is no natural habitat left at these sites. There are no protected areas, cultural heritage site, wetlands, mangroves, or estuaries in or near the sub-project location. There are no forest areas within or near Charghat Pourashava.
18. **Environmental Management:** An environmental management plan (EMP) is included as part of this IEE, which includes (i) mitigation measures for environmental impacts during implementation; (ii) an environmental monitoring program and the responsible entities for mitigating, monitoring, and reporting; (iii) Stakeholder, public consultation and information disclosure; and (iv) grievance redress mechanism. A number of impacts and their in-significance were reduced through mitigation measures in the preliminary design stage. The EMP will form part of the civil work bidding and contract documents.
19. Locations and sitting of the proposed infrastructures were considered to further reduce impacts. The concepts considered in design of the Bagha road and drain sub-project are: (i) locating facilities on government-owned land to avoid the need for land acquisition and relocation of people; (ii) prioritizing rehabilitation over new construction using public right of ways (ROWs), and taking all possible measures in design and selection of site or alignment to avoid resettlement impacts; (iii) avoiding where possible locations that will result in destruction/disturbance to historical and cultural places/values; (iv) avoiding tree-cutting where possible; (v) ensuring all planning and design interventions and decisions are made in consultation with local communities and reflecting inputs from public consultation and disclosure for site selection.
20. MDSC design team integrate a number of measures, both structural and non-structural, to mainstream climate resilience into the road and drain sub-project, including: (i) structural protection of facilities of future floods; (ii) location of components where there is no risk of flooding or other hazards and promote more efficient use of Pourashava resources accordingly as per public demand. As a result, some measures have already been included in the sub-project designs. This means that the impacts and their significance have already been reduced.
21. Key construction phase impacts identified and addressed in the IEE include (i) air, noise and vibration impacts due to construction vehicles, equipment and machinery in the vicinity of construction site and inhabited sections; (ii) management of spoils due to excavation for distribution network and civil works; (iii) safety measures during construction; (iv) traffic diversions; (v) management of sites temporarily used for construction activities, including borrow areas, construction camps, etc. and rehabilitation of the sites after completion of temporary use; (vi) impacts on community health and safety hazards posed to the public, specifically in inhabited areas.
22. In the operational phase, all facilities and infrastructure will operate with routine maintenance, which should not affect the environment. During the construction period environmental impacts will be minimize as the work following the EMP and take proper mitigation measures.
23. Mitigation measures have been developed to reduce all negative impacts to acceptable levels and will be assured through a program of environmental monitoring. The monitoring program will include observations on and off-site, document checks and interviews with workers and beneficiaries. The PMU will submit semi-annual monitoring reports to ADB which will include a detailed review of EMP implementation, including corrective actions taken.
24. **Consultation and Grievance Redress:** The stakeholders were involved in developing the IEE through discussions on-site and public consultation, after which views expressed were incorporated into the IEE and in the planning and development of the sub-project. The IEE will be made available at public locations in the Pourashava and will be disclosed to a wider audience via the ADB and LGED project websites. The consultation process will be continued and expanded during project implementation to ensure that stakeholders are fully

engaged in the project and have the opportunity to participate in its development and implementation. A GRM is described within the IEE to ensure any public grievances are addressed quickly.

25. **Monitoring and Reporting:** The PMU, PIU (Charghat Pourashava), and MDS Consultant will be responsible for safeguard monitoring. The MDS Consultant will submit monthly monitoring reports to PMU, and the PMU will send semi-annual monitoring reports to ADB. ADB will post the semi-annual environmental monitoring reports on its website as part of its disclosure requirements.

Conclusion and Recommendations:

26. The citizens of Charghat Pourashava will be the major beneficiaries of this sub-project. Result Based Lending (RBL) activities will need to be implemented applying government pollution control and Effective Health & Safety (EHS) requirements GoB and ADB & AFD Group's EHS guidelines. People's connectivity problem will remove, money and time will be saved and so many works/businesses access will open locally and nationally, if the new roads and drains are constructed there. The sub-project will facilitate the local people smooth communication and reduce water logging, traffic jam in proposed location. In addition to improved and maintained environmental conditions, the sub-project will also construct road and drain improvement infrastructure, proper internal drain slop maintain for outfall etc. The potential impacts that are associated with design, construction and operation can be mitigated to standard levels without difficulty through proper engineering design provided that the EMP is included in the contract document and its provisions implemented and monitored to their full extent.

1. INTRODUCTION

1.1 Background

1. Bangladesh has a population of approximately 162 million and experienced rapid urbanization with the growth of many secondary towns over the last three decades. About 28 per cent of the total population now lives in urban areas where the population growth rate is much higher than the overall national growth rate. With the present high increase-trend in urban population, it is justifiably anticipated that by year-2020, such population will constitute nearly 40 percent of the national aggregate. One principal cause of such rapid growth is the presence of better opportunities spanning economic, communication, education, health and other social aspects in the urban areas.
2. Proposed Project Readiness Services of Result Based Lending (RBL) for Improving Urban Governance and Infrastructure Program (IUGIP) with financial assistance from the ADB & AFD are for Urban Development in 63 main stream Pourashavas. The selected Pourashavas are: 1) Bandarban 2) Brahmanbaria 3) Banshkhali 4) Chandanaish 5) Nazirhat 6) Raozan 7) Sandwip 8) Faridganj 9) Hajiganj 10) Matlab South 11) Daganbhuiyan 12) Sonagazi 13) Khagrachhari 14) Raipur 15) Ramganj 16) Ramgoti 17) Chowmuhani 18) Basurhat 19) Rangamati 20) Bhanga 21) Boalmari 22) Kaliganj 23) Kaliakair 24) Tungipara 25) Bhairab 26) Hossainpur 27) Pakundia 28) Kalkini 29) Manikganj 30) Munshiganj 31) Mirkadim 32) Araihazar 33) Monohordy 34) Goalanda 35) Naria 36) Modhupur 37) Alamdanga 38) Keshabpur 39) Monirampur 40) Mohespur 41) Bheramara 42) Kumarkhali 43) Gangni 44) Gafargaon 45) Madan 46) Nokla 47) Shariakandi 48) Rohanpur 49) Shibganj 50) Nazipur 51) Santhia 52) Bagha 53) Bhabaniganj **54) Charghat** 55) Keshorhat 56) Naohata 57) Sundarganj 58) Ulipur 59) Patgram 60) Chunarughat 61) Kulaura 62) Moulvibazar and 63) Chhatak .
3. 25 Pourashavas Operation and Maintenance (O & M) are selected Pourashavas as- 1) Barguna 2) Pirojpur, 3) Nabinagar, 4) Laksam 5) Laxmipur, 6) Gopalganj,7) Kishoreganj, 8) Rajbari, 9) Chuadanga 10) Benapole 11) Jashore, 12) Magura, 13) Meherpur, 14) Muktagacha 15) Netrakona, 16) Sherpur, 17) Chapai Nawabganj, 18) Joypurhat 19) Naogaon, 20) Bera 21) Ishwardi, 22) Shahjadpur, 23) Lalmonirhat, 24) Nilphamari 25) Panchagarh.
4. IUGIP, RBL Program Scope; The RBL Program will support the construction of infrastructure facilities such as drains, roads, water supply infrastructure (water hand pumps and /or bore wells), low-income neighbourhoods up gradation, toilet blocks, footpath, tree plantation, improvement in market areas, etc.

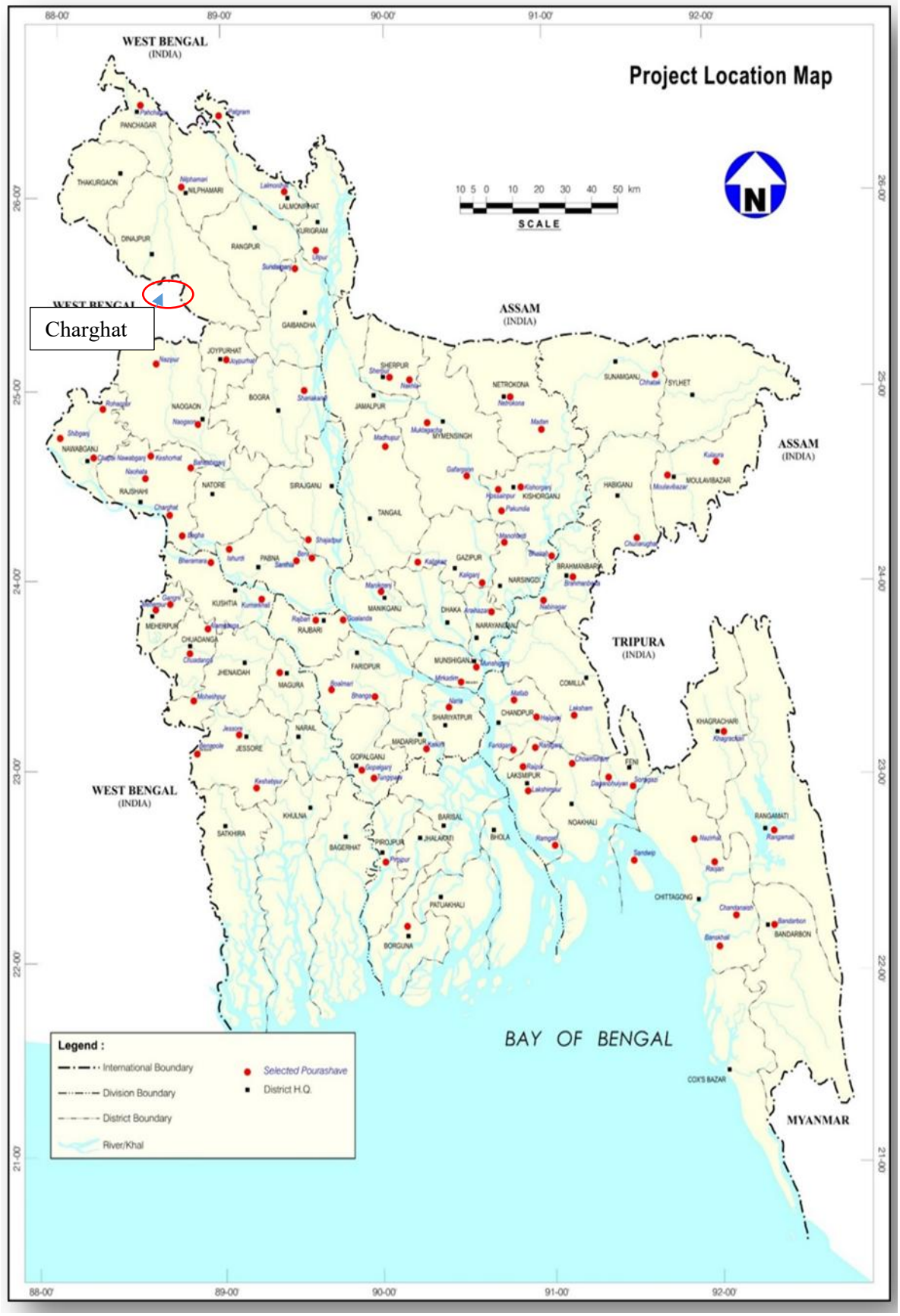


Figure1: Pourashavas under IUGIP

5. The Local Government Engineering Department (LGED) under the Local Government

Division (LGD) of the Ministry of Local Government, Rural Development and Cooperatives (MLGRD&C), will be the executing agency for the project.

6. Infrastructure sub-projects proposed under IUGIP (RBL) encompass a variety of types of urban infrastructure and services including those shown in Table 1.

Table 1: Sub-projects Components of Proposed IUGIP (RBL)

Sector / sub projects	Activities	Components
Urban Transport & communication	Road way Provision	Bridge Replacement Drainage/Culverts Roadway Widening/Resurfacing
	Road way Drainage	Roadside Drains
Urban Drainage	Area drainage	Outfall Main Drain Secondary and Tertiary Drains Retention Pond
Public use facilities	Municipal facilities	Market/Community Centers Municipal and Kitchen Markets Improvement of Slaughter houses Parks, Bus and Truck Terminals Street lights Footpaths
Low Income Neighborhoods (LIN)	System improvement	Repair/Replacement of Lines
	Community Facility	Community Toilets
	Septic tank	Vacuum Units

7. The overall objectives of the project are to strengthen the selected Pourashavas to reduced urban poverty and improved living conditions through planned, inclusive and sustainable urbanization, better city governance, and improved infrastructure and service provisions. The outcome will be better municipal governance and service delivery improved.

1.2 Sub-project Scope

8. The proposed sub-project package is IUGIP/CHAR/UT+DR/03/2023 which involves Improvement/Construction of Roads 1755.00m in 02 locations, RCC Drain 3392.00m in 05 locations and Installation of 60 nos Street Light & 100 nos Tree plantation with EMP at Charghat Pourashava, Rajshahi District.

1.3 Purpose of the report

9. The initial environmental examination aims to provide guidance on safeguard screening, assessment, institutional arrangement, and process to be followed for components of the project, where design takes place after board's approval. This IEE (i) assesses the capability of the project proponents to implement national laws and ADB's requirements, and identifies needs for capacity building; (ii) describes the project and its components; (iii) explains the general anticipated environmental impacts and mitigation measures for the sub-projects; (iv) specifies the requirements that will be followed in relation to screening and categorization, assessment, and planning, including arrangements for meaningful consultation with affected people and other stakeholders and information

disclosure requirements; (v) specifies implementation procedures, institutional arrangements, and capacity development requirements; and (vi) specifies monitoring and reporting requirements. Moreover, this IEE is to ensure, in line with ADB ESMF, that the road and drain sub-project, in the entirety of its project cycle, will not deteriorate or interfere with the environmental sensitivity of the project area, but rather improve environmental quality.

10. Success and lessons drawn from UGIIP and other ADB's urban sector projects of Bangladesh to inform the RBL program design include (i) using governance performance as a basis for the allocation of investment was an effective approach; (ii) conducting institutional capacity and community awareness to strengthen the municipal governance and sustainable delivery of services; (iii) the demonstrated impacts of IUGIPs generate high demand among Pourashavas; and (iv) implementation of infrastructure component of the project, coupled with timely technical support and capacity building, is pivotal to ensuring project readiness and implementation progress in a highly challenging context- the LGED demonstrated this capacity.

1.4 Scope of this report

11. This report fulfils the requirements of IEE under the provisions of the ECR. The IEE identifies potential environmental and social impacts and issues associated with undertaking the proposed sub-project. It provides an outline of the potential positive and negative impacts because of the project and proposes suitable mitigation and management measures. The scope of this report and the subsequent IEE is specific to the sub-project. It does not provide any assessment for any other/future developments or activities at the location or anywhere else within Poura area. Should any further development be planned as result of either this sub-project or other related work, additional planning and assessment of the requirements of the GOB must be carried out specifically in relation to that proposed development.

1.5 Approach and Methodology

12. The primary purpose of the IEE is to investigate and describe impacts of the proposed sub-project to the existing environmental elements. Specifically, the study aims to predict the potential impacts of the project activities and recommend mitigation and abatement measures for impacts (in the pre-construction, construction, after completion of works and operational stages of development) that are considered potentially adverse to the surrounding environment. In general, this IEE intends to:

    - Examine and describe the existing status of the various ecological, physical and human related components surrounding the project area;
    - Predict the potential significant impacts of the project on the surrounding environment during the pre-construction, construction, after completion of works, operations and maintenance stages and recommend appropriate mitigation and abatement measures; and
    - Identify residual impacts of the sub-project and recommend appropriate short-term and long-term management plans.

13. Data sources of IEE the following documents were used as reference in the preparation of the IEE report:

    - Primary data collected from extensive field visit in the Pourashava.
    - Available technical reports, Pourashava Development Plan from Pourashava and various government agency of DAE, DPHE, BMD etc.
    - Available laws, rules, regulations, acts, policies from Bangladesh Government websites
    - Maps from open sources and various governmental and non-governmental websites
    - Data from secondary literatures including books and relevant websites.

2. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

2.1 Regulatory requirements for the Project

14. This section of the IEE details the Administrative regulatory requirements toward protection and conservation of environment and various environmental resources and also toward protection of social and environment from adverse impact of projects and activities are associated with them have been enunciated by the GOB as well as the ADB & AFD Pertinent requirements.
15. The national environmental policies and laws and legal framework applicable to the proposed project have been identified. An overview of a few of the major national environmental laws and regulations that are relevant and may apply to the activities supported by the proposed project, and Asian Development Bank (ADB) safeguard policies are given below.

2.2 GOB Environmental Policy, Regulation and Guidelines and ADB safeguard policy Statement

National Environmental Policy 2018

16. It is essential that proper environmental management and appropriate use of different components of environment is practiced in every region of the country and in every development project. Therefore, the National Environmental Policy 2018 has been developed addressing the sector-wise environmental policy among 24 sectors/fields.

National Environmental Policy 1992

17. The Bangladesh has adopted a National Environmental Policy (NEP) in 1992 aimed at sustainable development. The NEP sets out the basic framework for environmental action together with a set of broad sectorial guidelines for action. Major elements of the policy are as follows:

    - The country to strike a dynamic balance between population and resources while complying with the balance of ecosystems;
    - To contribute to sustainable and harmonious socio-economic development such that, both in rural and urban areas, and well-being in a sound and enjoyable environment; and
    - To protect, conserve and develop natural environment.

18. **Relevance to the sub-project** - With regard to the sub-project, the environmental policy aims at prevention of pollution and degradation of resources caused by the road and drain construction. The policy mentions that Initial Environmental Examination should be conducted before projects are undertaken.

National Environmental Conservation Act (ECA) 1995

19. The ECA is currently the main legislation relating to environment protection in Bangladesh. This Act is promulgated for environment conservation, environmental standards development and environment pollution control and abatement. The main objectives of ECA are:

    - Conservation and improvement of the environment; and
    - Control and mitigation of pollution of the environment.

20. The main focuses of the Act can be summarized as:

    - Declaration of ecologically critical areas and restriction on the operations and processes, which can or cannot be carried out/ initiated in the ecologically critical areas (ECA);
    - Regulations in respect of vehicles emitting smoke harmful for the environment;
    - Environmental clearance;
    - Regulation of industries and other development activities' discharge permits;

- Promulgation of standards for quality of air, water, noise and soil for different areas for different purposes;
- Promulgation of a standard limit for discharging and emitting waste; and
- Formulation and declaration of environmental guidelines.

Project Management Unit (PMU) have been completed Environmental Clearance certificate from the DoE.

Environmental Conservation Act (Amendment 2000)

21. The Bangladesh Environment Conservation Act Amendment 2000 focuses on ascertaining responsibility for compensation in cases of damage to ecosystems, increased provision of punitive measures both for fines and imprisonment and the authority to take cognizance of offences.

Environmental Conservation Act (Amendment 2002)

22. The 2002 Amendment of the ECA elaborates on the following parts of the Act:

- Restrictions on polluting automobiles;
- Restrictions on the sale, production of environmentally harmful items like polythene bags;
- Assistance from law enforcement agencies for environmental actions;
- Break up of punitive measures; and
- Authority to try environmental cases.

Environmental Conservation Act (Amendment 2010)

- This amendment of the act introduces new rules and restriction on:
- No individual or institution (Gov. or Semi Govt., / Non-Govt. / Self Governing) can cut any Hill and Hillock. In case of national interest; it can be done after getting clearance from respective the department
- Owner of the ship breaking yard will be bound to ensure proper management of their hazardous wastes to prevent environmental pollution and Health Risk
- No remarked water body cannot be filled up/changed; in case of national interest; it can be done after getting clearance from the respective department; and
- Emitter of any activities/incident will be bound to control emission of environmental pollutants that exceeds the existing emission standards.

23. **Relevance to the sub-project** - According to this law no industrial unit or project shall be established or undertaken without obtaining, in the manner prescribed by rules, an letter from the Director General.

Environmental Conservation Rules (ECA) 2023

24. These are the first set of rules, promulgated under the Environment Conservation Act of 1995 (so far there have been multiple amendments to this set of rules, recently gazetted ECR, 2023 supersedes all. The Environment Conservation Rules (ECR) has classified the projects into following four categories based on their site conditions and the impacts on the environment;

    (a) Green,
    (b) Yellow,
    (c) Orange and
    (d) Red.
    Various industries and projects falling under each category have been listed in Schedule-1 of ECR 2023.

25. According to the Rules, Environmental Clearance Certificate is issued to all existing and proposed industrial units and projects, falling in the Green Category without undergoing EIA. However, for category Yellow, Orange and for red projects, require location clearance certificate and followed by issuing of Environmental Clearance upon the

satisfactory submission of the required documents. Green listed industries are considered relatively pollution-free, and therefore do not require site clearance from the DoE. On the other hand, Red listed industries are those that can cause 'significant adverse' environmental impacts and are, therefore, required to submit an EIA report. These industrial projects may obtain an initial Site Clearance on the basis of an IEE based on the DoE's prescribed format, and subsequently submit an EIA report for obtaining Environmental Clearance.

26. Depending upon location, size, and severity of pollution loads, projects/activities have been classified in ECR 2023 into four categories: Green, Yellow, Orange, and Red respectively, to nil, minor, medium, and severe impacts on important environmental components (IECs).
27. **Relevance to the sub-project -** In accordance with the revised Environment Conservation Rules (ECR, 2023) section-1, the sub-projects of under IUGIP project are not applicable. However, Markets, parks, slaughter house, street lights, toilets and bus & truck terminals are in orange category which is included in this project. As a result, "an initial environmental examination (IEE) is required to determine. However, ADB SPS guidelines the sub-Project is classified as Orange-B Category, requiring an Initial Environmental Examination (IEE) to obtain clearance for construction.

Air Pollution Control Rules 2022

28. The government has published a new rule based on section 20 of The Bangladesh Environment Conservation Act, 1995. Aiming to protect environmental health. The main objectives of this rule are to prevent, control, and reduce air pollution. The government will appoint a Director General who will be responsible for managing and maintaining the environmental issue. The Air pollution (Control) Rules 2022 has specified several types of pollution such as pollution caused by factories, vehicles, construction, garbage, etc. According to the new rule, there will be a committee that will impose damages and punishment for such pollution. As stated by the rule, the government will give rewards to those who will protest against pollution and not cause any type of pollution.

Noise Pollution Control Rules 2006

29. According to the Environment Protection Act 1995, the government formulated the noise pollution Rules & Regulation in 2006. This regulation recommends to keep the sound level: at 50 dB in quieter areas from 6am until 9pm and at night 40 dB; similarly, in residential areas in the day at 55 dB and at night 45 dB; in mixed areas, 60 dB in the day time and at night 50 dB; in commercial areas in the day,70 dB and at night 60 dB; and, in industrial areas in the day, 80 dB and at night 70 dB.

Bangladesh Labour Act 2006 and Conservation Services Rules 2015

30. The Bangladesh Labour Act was promulgated in 2006. The legislation pertains to the occupational rights and safety of factory workers and the provision of a comfortable work environment and reasonable working conditions. The amendment in 2013 introduced a good number of important items like workers' welfare, rights and safety and industrial safety and expansion of the industry (particularly relevant for this project).
31. This Act applies to the proposed project as it will involve construction and erection of structures. The occupational health and safety of the workers is covered under this Act. It is mandatory for every factory to keep its workers abreast of work risk(s) through providing all workers with personal protection equipment.
32. In 2015, the Bangladesh government introduced the Bangladesh Labour Rules. Some of the relevant points of these Rules are health and fire safety. The Bangladesh Labour Act 2006 consolidated and repealed 25 previous labour-related laws including the Dock Labourers Act, 1934, the Factories Act, 1965, among others.

2.3 Other Acts and Policies relevant to Environmental Safeguards of RBL Program

33. In addition to the Environmental Conservation Act and Rules, there are several other Acts,

Rules and policies dealing especially with water supply, sanitation, noise, forests, wildlife, labour welfare and occupational health and safety.

34. The Ministry of Environment, Forests and Climate Change (MoEFCC) prepare the environmental policies. MoEFCC also has formulated regulation toward clearance of projects from environmental angles based on environmental impact assessment report. The Department of Environment (DoE) is responsible for environmental issues while forest issues are looked after Forest Department (FD). Over the years the MoEFCC has adopted number of legal instruments in the form Acts for the protection and conservation of the environment. Table 2 summarizes the Environmental Legislation applicable to the sub-project.

Table 2: Summary of Applicable Environmental Legislations

Sl. No.	Environmental Legislation / Act	Objective	Relevance to the Project	Responsible Institution
1	•National Environmental Policy, 1992 •National Environmental Policy, 2018	Ensure that development components do not pollute the environment or degrade resources. It sets out the basic framework for environmental action together with a set of broad sectoral action guidelines.	•Restriction on operations which cannot be initiated in ecological critical areas •Regulation on vehicles emitting smoke which is harmful to the environment •Follow standards on	Ministry of Environment and Forests, and Climate Change
2	Environmental Conservation Rules, 2023	Establishes a framework for environmental assessment in a comprehensive way	•Option to affected persons for grievances related to environment safeguards •Follow standards on	Department of Environment (DoE)
3	National Environmental Management Action Plan (NEMAP), 1995	An action plan to identify key environmental issues affecting Bangladesh, identifies actions for reducing the rate of environmental	Sectoral agencies to coordinate with MoEFCC in preparing environmental guidelines	Ministry of Environment and Forests, and Climate Change
4	Environment Court Act, 2000 and subsequent amendments in 2003	Establishment of Environment Court for trial of an offence or for compensation under environmental law, such	Option to affected persons for grievances related to environment safeguards.	Ministry of Environment and Forests, and Climate Change
5	The Forest Act (1927) and Forest (Amendment) Act (2000)	An act to control trespassing, illegal resource extraction and provide a framework for the forestry revenue	Requires clearances for any project within forest areas and clearances for any felling, extraction and	Department of Forests
6	National Forest Policy (1994)	To conserve existing forests and bring about 20% of the country's land area under the Forestation Programme and increase reserved forests by 10% per year until 2015	Incorporate tree planting in the subproject Clearance for any felling, extraction, and transport of forest produce	Department of Forests

Sl. No.	Environmental Legislation / Act	Objective	Relevance to the Project	Responsible Institution
7	The Bangladesh Wildlife (Conservation & Security) Act, 2012	To conserve and protect wildlife in Bangladesh including designation of protected areas. Protection of wildlife is provided with lists of species with four schedules: first, second, third and fourth schedule. The fourth schedule species have the highest level of protection.	Consultation and necessary permits required if the project would affect the wildlife in the project area.	Department of Forests
8	National Safe Drinking Water Supply and Sanitation Policy of 1998	Ensures access to safe water and sanitation services at an affordable cost	Pourashavas and water sanitation authorities will take actions to prevent wastage of water. They will take necessary steps to increase public awareness to prevent misuse of water Pourashavas shall be responsible for solid waste collection, disposal and their management	Ministry of Local Government, Rural Development, and Cooperatives
9	National Water Act 2013	Ensures Bangladesh water sources are free from any type of pollution. Pollution from water in urban outfalls and reservoirs, e.g., lakes, canals, ponds and ditches may result in amenity losses, fisheries depletion, health problems, fish, and aquatic species contamination.	Secure clearance certificate on water resource development subprojects	Ministry of Water Resources
10	Wetland Protection Act 2000	Advocates protection against degradation and resuscitation of natural water-bodies such as lakes, ponds, beels[2], khals, tanks, etc. affected by man-made interventions or other causes. Prevents the filling	In case of impact on the natural water bodies within the project area	Ministry of Water Resources

[2] A beel is a billabong or a lake-like wetland with static water (as opposed to moving water in rivers and canals - typically called khals), in the Ganges - Brahmaputra flood plains of the Eastern Indian states of West Bengal, and Assam and in the country of Bangladesh.

Sl. No.	Environmental Legislation / Act	Objective	Relevance to the Project	Responsible Institution
		of publicly-owned water bodies and depressions in urban areas for preservation of the natural aquifers and environment. Prevents unplanned construction on riverbanks and indiscriminate clearance of vegetation on newly accreted land.		
11	Bangladesh Labor Law, 2006	It is a comprehensive law covering labour issues such as: conditions of service and employment, youth employment, benefits including maternal benefits, compensation for injuries, trade unions and industrial relations, disputes, participation of workers in company's profits, regulation of safety of dock workers, penalty procedures, administration and inspection. This Act pertains to the occupational rights and safety of factory workers and the provision of a comfortable environment for working. It also includes rules on registration of labourers, misconduct rules, income and benefits, health and fire safety, factory plan	Compliance to provisions on employment standards, occupational health and safety, welfare and social protection, labor relations and social dialogue, and enforcement. Prohibition of employment of children and adolescents.	Ministry of Labor and Employment
12	Bangladesh Labor Rules, 2015	Includes rules on registration of laborers, misconduct rules, income and benefits, health and fire safety, factory plan	Contractors to implement occupational health and safety measures. Contractor will be liable for compensation for work-related injuries.	Department of Labor
13	The Pourashava Act 2009 / Ordinance issued for the amendment of	Provides guidance for subproject integrated community and workers health and hygiene at the construction and	Coordinate with Pourashava committees on disaster management measures, water and	Local Authorities

Sl. No.	Environmental Legislation / Act	Objective	Relevance to the Project	Responsible Institution
	local government (municipality) ordinance, 2009 and 2010; The Pourashava Ordinance, 1977; Municipal Administration Ordinance, 1960	operation and maintenance stages of the project	sanitation and waste management	
14	Bangladesh Climate Change Strategy and Action Plan of 2009	Enhances the capacity of government ministries, civil society and private sector to meet the challenges of climate change	Integrate adaptation measures for infrastructures in consideration of extreme climatic events	Ministry of Environment, Forests and Climate Change
15	National Disaster Management Act of 2012	Establishes a framework for managing disasters in a comprehensive way.	Setting-up emergency response procedures	Ministry of Disaster and Relief

2.4 Applicable International Agreements

35. A side from the legal framework on environment, Bangladesh is also a party to several international conventions, treaties, and protocols related to environmental protection. The applicable international conventions, treaties, and protocols are described in Table 3.

Table 3: Relevant International Conventions, Treaties, and Protocols Signed by Bangladesh

Conventions	Years	Ratified/Accessed (AC)/Accepted (AT)/ Adaptation (AD)	Relevance
International Plant Protection Convention (Rome,) & Plant Protection Agreement for SE Asia and Pacific (1999 Revision)	1951	01.09.1978 04.12.1974 (AC) (Entry into Force)	Ensuring that the project work or construction materials do not introduce plant pests
Environmental Conservation Rules (ECR) 2023	2023	05.03.2023	To ensure sustainable development and prevent environmental degradation in Bangladesh by regulating the activities that may have adverse impacts on the environment and human health
National Environmental Policy 2018	2018	01.06.2018	environment conservation, pollution control, biodiversity conservation, and mitigation of the adverse effect

Conventions	Years	Ratified/Accessed (AC)/Accepted (AT)/ Adaptation (AD)	Relevance
			of climate change to ensure sustainable development
Convention on Wetlands of International Importance ("Ramsar Convention":1971)	1999	20.04.1992 (ratified)	Protection of significant wetland and prevention of draining or filling during construction
Convention on Biological Diversity, (Rio de Janeiro, 1992.)	1992	05.06.1992	Protection of biodiversity during construction and operation.
Convention on Persistent Organic Pollutants, Stockholm.	2001	In process	Restrict use of different chemicals containing POPs.
United Nations Framework Convention on Climate Change, (New York, 1992.)	1992	15.04.94	Reduction of emission of greenhouse gases.
Convention on Biological Diversity, (Rio De Janeiro, 1992.)	1992	03.05.94	Conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.
Kyoto protocol to the United Nations Framework Convention on Climate Change		21.8.2001 (AC) 11.12.1997 (AD)	Reduction of emission of greenhouse gases.
International Convention for Protection of Birds, Paris	1950	Signed	Protection of the birds in their wild state.
Convention Concerning the Prevention and Control of Occupational Hazards caused by Carcinogenic Substances and Agents, Geneva.	1974	Signed	To protect workers against hazards arising from occupational exposure to carcinogenic substances and agents.

Conventions	Years	Ratified/Accessed (AC)/Accepted (AT)/ Adaptation (AD)	Relevance
Convention Concerning the Protection of Workers Against Occupational Hazards in the Working Environment due to Air Pollution, Noise and Vibration, Geneva	1977	Signed	Protection of workers' health against occupational hazards in the working environment due to air pollution, noise and vibration.
Convention Concerning Occupational Safety and Health and the Working Environment, Geneva.	1981	Signed	Ensuring occupational health and safety of workers in all branches of economic activity.
Vienna Convention for the Protection of the Ozone Layer, Vienna	1985	02.08.90 (AC) 31.10.90 (entry into force)	Preventing human activities that may have adverse effects on ozone layer.
Convention Concerning Occupational Health Services, Geneva.	1985		Convention Concerning Occupational Health Services, Geneva.
Montreal Protocol on Substances that Deplete the Ozone Layer, Montreal.	1987	31.10.90 (Entry into force)	Reduction of the abundance of the substances that deplete the ozone layer in the atmosphere, and thereby protect the earth's fragile ozone Layer.
Convention Concerning Safety in the Use of Chemicals at Work, Geneva.	1990	Signed	Regulating the management of chemicals in the workplaces I order to protect workers from the harmful effects of these substances.
London Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, London.		18.03.94 (AC) 16.06.94 (entry into force)	To strengthen the control procedure and extend the coverage of Montreal Protocol to new substances.
Preparedness, Response and Cooperation (London, 1990.) 30.11.90 United Nations Framework Convention on Climate Change, New York	09.06 .92	15.04.94	Achieving stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

Conventions	Years	Ratified/Accessed (AC)/Accepted (AT)/ Adaptation (AD)	Relevance
Convention on Biological Diversity, Rio De Janeiro	05.06.92	03.05.94	Conservation of biological diversity (or biodiversity) and sustainable use of its components.
Agenda 21, UNCED, Rio de Janeiro	1992	Signed	Ensuring sustainable development.
Copenhagen Amendment to the Montreal protocol on Substances that Deplete the Ozone Layer, Copenhagen, 1992	1992	27.11.2000 (AT) 26.2.2001 (Entry into force)	Extending the coverage of Montreal Protocol to new substances
Montreal Amendment of the Montreal Protocol on Substances that Deplete the Ozone Layer, Montreal	1990	27.7.2001 (Accepted) 26.10.2001 (Entry into force)	Controls in the trade of ozone depleting substances and the use of licensing procedures to control the import and export of new, recycled and reclaimed ozone depleting substances.

2.5 Environmental Categorization and Standards of Bangladesh

Environmental Category: DoE

36. For the purpose of issuance of Environmental Clearance Certificate, the industrial units and projects shall, in consideration of their site and impact on the environment, be classified into the following four categories: (a) Green (b) Yellow (c) Orange and (d) Red. The industries and projects included in the various categories are specified in sub-rule (1) have been described in Schedule-1. The ECA indicates that all industrial units or projects must obtain a Location Clearance Certificate (LCC) and Environmental Clearance Certificate (ECC) from the Department of Environment (DoE). No industrial unit/project shall be established or undertaken without obtaining environmental clearance from DoE in the manner prescribed by the rules.
37. **Category of RBL Program Activities per ECR, 2023;** Category as per revised ECR, 2023 section-1 of the 2023 ECR provides a classification of projects into four categories, depending on environmental impact and location. These categories are; Green, Yellow, Orange and Red. Based on projects listed in section-1 to the ECR Rules, 2023, roads and drains activities proposed in RBL fall under the ambit of this legislation requiring of ECC do not require and red category projects are not eligible for implementation under RBL
38. Charghat Pourashava road and drain sub-project is classified as Environmental Category B as per ADB SPS as no in-significant impacts are envisioned. This initial environmental examination has been prepared in accordance with ADB SPS's. Table 4 describes DoE classification for road and drain sub-project.

Table 4: Category Proposed RBL Activities per ECR, 2023 (Section-1)

Sl no.	Sub-project/component	Classification per ECR 2023	Indicative ESMF classification	Required IEE	Remarks
1	Urban transport roads	Not applicable. [Not covered in Section-1 and ECC not required]	B	IEE Report	
2	Drains improving	Not applicable. [Not covered in Section-1 and ECC not required]	B	IEE Report	

39. The DoE has issued a letter for Improving Urban Governance and Infrastructure Program (IUGIP), vide letter vide letter 22.02.0000.018.72.029.23.177 dated 25.06.2023. (DoE approved of Letter Appendix -09).

Environmental Category: as per ADB's Safeguard Policy Statement 2009

40. The Safeguards Policy Statement (SPS 2009) of ADB provides guidance on the environment category of sub-projects based on the degree of anticipated environmental impacts. ADB environmental safeguards objectives are: (i) to ensure the environmental soundness and sustainability of sub-projects and (ii) to support the integration of environmental considerations into the sub-project decision-making process. ADB environmental safeguards are triggered if a project is likely to have potential environmental risks and impacts. The initial process of categorization involves filling out a sectoral Rapid Environmental Assessment (REA) checklist. A project is classified as one of the four environmental categories (A, B, C, or FI) based on the most environmentally sensitive component. Categories are as follows:

    Category A: Project that is likely to have significant adverse environmental impacts which are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. An environmental impact assessment (EIA), including an environmental management plan (EMP), is required implications need
    Category B: Project with potential adverse environmental impacts that are less adverse than those of category A projects. These impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects. An initial environmental examination (IEE), including an EMP, is required.
    Category C: Project that is likely to have minimal or no adverse environmental impacts. An EIA or IEE is not required, although environmental to be reviewed.
    Category FI: Project is classified as category FI if it involves the investment of ADB funds to, or through, a financial intermediary.

41. The sub-project has been categorized as B for environment under the ADB's Safeguards Policy statement 2009 (SPS).

3. DESCRIPTION OF THE SUB-PROJECT

3.1 Sub-project Location and Surroundings

42. The Charghat Pourashava is in the district of Rajshahi under Rajshahi Division of Bangladesh and lies between 24º14´ and 24º22´ north latitudes and between 88º46´ and 88º52´ east longitudes. The area of the Charghat Pourashava is 21.81 sq.km and its total population is 38,409, as of 2011. Charghat has 6 Unions/Wards, 93 Mauzas/Mahallas, and 129 villages. Charghat is on the bank of the river Padma. There is the only Police Academy at Sardah & a cadet college. Charghat was declared Pourashava in 1998.
43. This report contains the Initial Environmental Examination (IEE) for the road and drain sub-project at Charghat Pourashava of Rajshahi District in Rajshahi Division. Sub-project components are located in Bagha urban area or in its immediate surroundings that were converted into urban use for many years ago, and there are no protected areas, wetlands, mangroves, or estuaries in or near the sub-project location. The sub-project sites are located in existing network by the Pourashava.

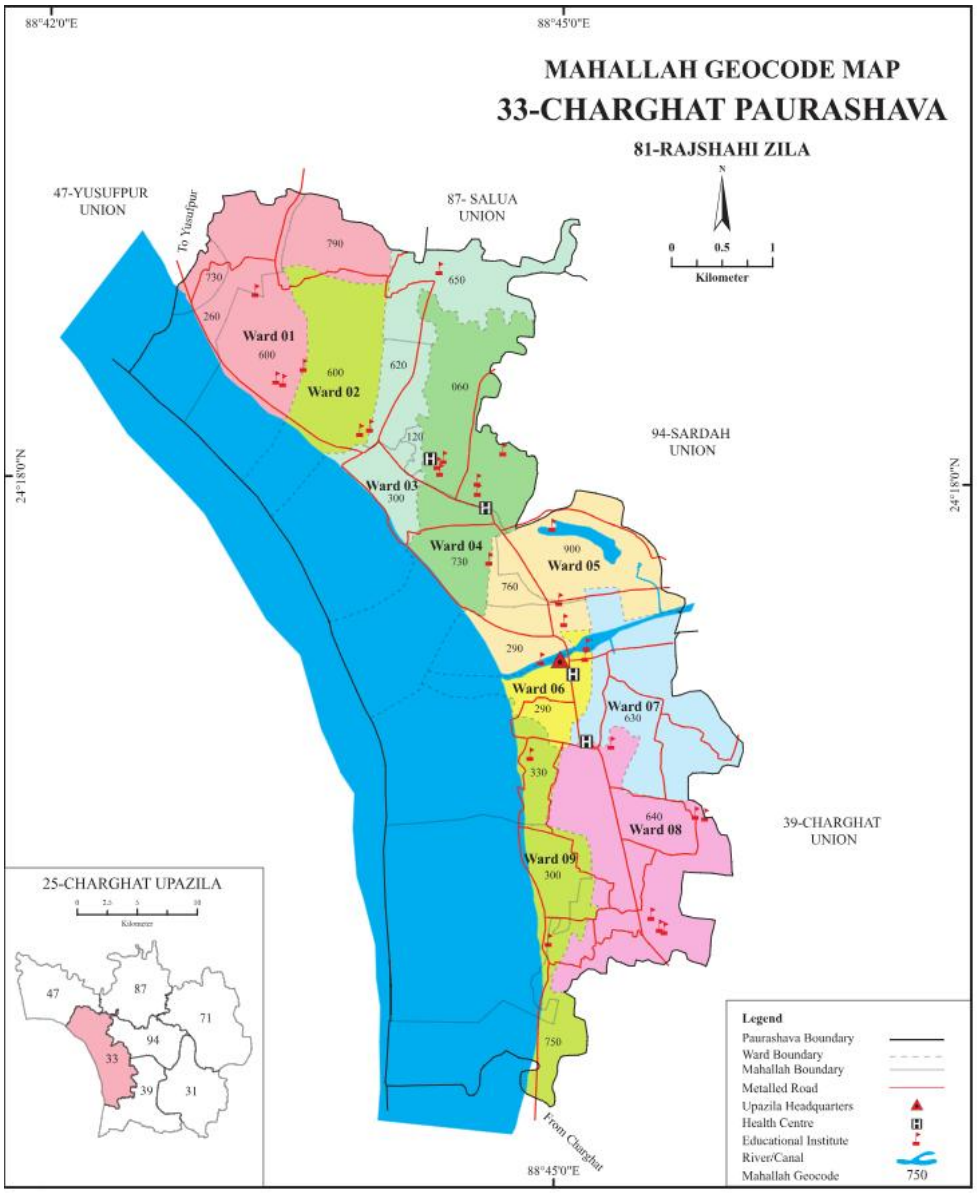


Figure 2: Map of Charghat Pourashava

3.2 Sub-project summary

44. The sub-project package IUGIP/CHAR/UT+DR/012023 Improvement/Construction of Roads 1755.00m in 02 locations, RCC Drain 3392.00m in 05 locations and Installation of 60 nos Street Light & 100 nos Tree plantation with EMP at Charghat Pourashava, Rajshahi District. The construction of roads and drains infrastructure schemes will be constructed under the IUGIP.

Table 5: Proposed Roads and Drains sub-Project in Charghat Pourashava

FY	Pkg No	PDP SL	Scheme Name/ Name of works	Length (m)
2023-2024	IUGIP/CHAR/UT+DR/01/2023	Name of Sub-project:	Improvement/Construction of Roads 1540.00m in 02 locations, RCC Drain 3351.00m in 06 locations and Installation of 53 nos. Street Light & Tree plantation with EMP at Charghat Pourashava, Rajshahi District.	
		R-008	Improvement of Road Starting from Chok Mukterpur Sohider Bottola to Chok Para mour by Uni-Block (Ch.0.00-1230.00m) & Installation of 42 nos. Street Light at Word No. 01 under Charghat Pourashava, Rajshahi. (Total Length= 1230.00m)	1230
		R-600	Improvement of Road starting from near Chipara Joinal house to near Hothathpara Josna House by Uni-block (Ch.0.00 to 310.00m) & Installation of 11 nos. Street Light at Ward No.05 under Charghat Pourashava, Rajshahi. (Total Length= 310.00m)	310
			Total Road (A) =	**1540**
		DS-01	Construction of RCC Drain starting from Sharkar Para mour to proposed Drain DS-05 near Chok-Mukterpur Kobad mour (Ch.0.00 to 732.00m) at Ward No.01 under Charghat Pourashava, Rajshahi. (Total Length= 732.00m)	732
		DS-05	Construction of RCC Drain starting from Chok Mukterpur Sohid er Bottola to Chok para mour Padma River (Ch.0.00 to 1000.00m) at Ward No.01 under Charghat Pourashava, Rajshahi. (Total Length= 1000.00m)	1000
		DS-15	Construction of RCC Drain starting from Shohish Para Mondir to existing Drain near Hemonto mour (Ch.0.00 to 211.00m), and Link Drain starting from near Union Bhumi Office to Shefali Councilor house (Ch.0.00 to 67.00m) at Ward No.05 under Charghat Pourashava, Rajshahi. (Total Length= 278.00m)	278
		DS-17	Construction of RCC Drain starting from near Askorpur Saleha Madrasah to existing UGIIP-III drain near Sardha Bazar Chowrasta Askorpur Bazar Jame mosque (Ch.0.00 to 511.00m) at Ward No.04 under Charghat Pourashava, Rajshahi. (Total Length= 511.00m)	511
		DS-18	Construction of RCC Drain starting from Askorpur Bazar mosque to RHD Culvert near TNT mour (Ch.0.00 to 520.00m) at Ward No.04 under Charghat Pourashava, Rajshahi. (Total Length= 520.00m)	520
		DS-33	Construction of RCC Drain starting from near Chipara Joinal house to Hothathpara Boral River (Ch.0.00 to 310.00m) at Ward No.05 under Charghat Pourashava, Rajshahi. (Total Length= 310.00m)	310
			Sub- Total Drain (B) =	**3351**
			Grand Total (A+B) =	**R =1540 D =3351**



Figure 3: Map of Proposed Schemes Charghat Pourashava

3.3 Existing Condition and Need for the Sub-project

45. Charghat Pourashava is a class-A type Pourashava and one of the renowned Pourashavas in Bangladesh. Most of the roads and drains of this Pourashava have uneven-rough surface, damaged topping and pavement sides, narrow in width and without roadside footpath and thus incapable of accommodating road traffic. Traffic congestion, delay, accidents, pedestrian and parking difficulties, air and noise pollution are among the problems. Justifiably, they call for intervention varying from normal significant maintenance to large improvement/ reconstruction. Due to the presence of waterlogging, ponds and ditches on the side of most of the roads and drains, the road shoulders are badly damaged due to the flow of water in the river/canal. The roadside drains are inadequate due to insufficient capacities and incorrect gradients. No people/ vehicles can move in this road due to water logging/ damaged condition in rainy season. That's why Pourashava demanded the development of this roads and drains through improvement of dense carpeting, RCC road, RCC drain and partial beautification besides road. The nearby urban residents in surrounding locality will be benefited from improvement of the proposed sub-project for creating better business and livelihood opportunities. No economic activities will be impeded resulting losses in income or asset during construction period. There is no need to be acquired any land for the construction as required land is available under the possession of the Bagha Pourashava Table 6.
46. Maximum generated wastes are uncollected, while these are often informally burned, buried, or illegally dumped in streets, public spaces, drainage channels, and waterways. This has resulted not only in public health hazards and the contamination of the environment, including air, water, and soil, but also the blocking of major drainage channels and sewerage networks.

Table 6: Existing/Proposed Conditions of Pourashava roads & drains

R-009	**Improvement of Road starting from Chok Mukterpur Sohid er Bottola via Mahfuj shop to Pakurtola near Adv. Azad house by Uni-Block (Ch.0.00-1358.00m) & Installation of 46 nos. Street Light at Ward No. 01 under Charghat Pourashava, Rajshahi. (Total Length= 1358.00m)**	
1	Total Length (m)	1358 m
2	Existing road width (m)	3.00m
3	Existing road surface	Damaged BC Road
4	Topography	Flat plain land
5	Water bodies along the road	Yes
6	Water bodies within 100 m of the road	Yes
7	Trees within the ROW	Yes
8	Approximate number of trees	34
9	Tree species	Not applicable
10	Number of trees to be removed (approximate)	14
11	Plantation scope on the roadsides	Yes
12	Utilities in the ROW	No
13	Land use along the road	Densely Populated
14	Traffic on the road	Moderate traffic movement
	Any other activities on the road	No
15	Sensitive areas/structures along the road	Not applicable

16	Photograph	

R-599	**Improvement of Road starting from Gopalpur Primary school to Pollok shop by Uni-Block (Ch.0.00 to 397.00m) & Installation of 14 nos. Street Light at Ward No. 09 under Charghat Pourashava, Rajshahi. (Total Length= 397.00m)**	
1	Total Length (m)	397 m
2	Existing road width (m)	Average 3.00m
3	Existing road surface	Damaged BC Road
4	Topography	Flat plain land
5	Water bodies along the road	Yes
6	Water bodies within 100 m of the road	Yes
7	Trees within the ROW	Not anticipated
8	Approximate number of trees	Not applicable
9	Tree species	Not applicable
10	Number of trees to be removed (approximate)	Not applicable
11	Plantation scope on the roadsides	Not applicable
12	Utilities in the ROW	No
13	Land use along the road	Densely populated
14	Traffic on the road	Low traffic movement
	Any other activities on the road	No
15	Sensitive areas/structures along the road	Not applicable

16	Photograph	

DS-03	**Construction of RCC Drain starting from Mondol Para Freedom Fighter Siddik house to existing drain Dofadarpara near Saban house (Ch.576.00 to 0.00m), and Link Drain: starting from near Siraj house to Proposed drain near Alal Pond (Ch.230.00 to 0.00m) at Ward No.02 under Charghat Pourashava, Rajshahi. (Total Length= 806.00m)**	
1	Total Length drain (m)	806 m
2	Existing drain width (m)	Absent
3	Existing drain condition	Poor drainage condition
4	Topography	Flat plain
5	Water bodies along the drain	No
6	Existing outfall	Existing low land
7	Water bodies within 100 m of the drain	No
8	Trees within the drain alignment	No
9	Approximate number of trees	Not Available
10	Tree species	Not Available
11	Number of trees to be removed (approximate)	Not Applicable
12	Utilities in the drain alignment	Yes(Electric Post)
13	Land use along the drain	Homestead Area
14	Sensitive areas/structures along the drain	No
15	Photograph	

DS-04	**Construction of RCC Drain starting from Chok Mukterpur Sohid er Bottola to existing drain near Mahfuj Shop (Ch.0.00 to 1114.00m) at Ward No.01 under Charghat Paurashava, Rajshahi. (Total Length= 1114.00m)**	
1	Total Length drain (m)	1114 m
2	Existing drain width (m)	Absent
3	Existing drain condition	Poor drainage condition
4	Topography	Flat plain
5	Water bodies along the drain	Yes
6	Existing outfall	Yes
7	Water bodies within 100 m of the drain	Yes
8	Trees within the drain alignment	34
9	Approximate number of trees	Not applicable
10	Tree species	14
11	Number of trees to be removed (approximate)	Yes
12	Utilities in the drain alignment	No
13	Land use along the drain	Densely Populated
14	Sensitive areas/structures along the drain	Moderate traffic movement
15	Photograph	

DS-06	**Construction of RCC Drain starting from near Safi Councilor Pond to Proposed Drain (DS-03) near Banir mour (Ch.0.00 to 480.00m) at Ward No.01 under Charghat Paurashava, Rajshahi. (Total Length= 480.00m)**	
1	Total Length drain (m)	480 m
2	Existing drain width (m)	Absent
3	Existing drain condition	Poor drainage condition
4	Topography	Flat plain
5	Water bodies along the drain	No
6	Existing outfall	Existing low land
7	Water bodies within 100 m of the drain	Not anticipated
8	Trees within the drain alignment	No
9	Approximate number of trees	Not Available
10	Tree species	Not Available
11	Number of trees to be removed (approximate)	Not Applicable

12	Utilities in the drain alignment	Yes(Electric Post)
13	Land use along the drain	Homestead Area
14	Sensitive areas/structures along the drain	No
15	Photograph	

DS-16	**Construction of RCC Drain starting from existing Culvert near Patan tola to existing drain (UGIIP-iii) near Jamal Mir House (Ch.0.00 to 517.00m) at Ward No.04 under Charghat Paurashava, Rajshahi. (Total Length= 517.00m)**	
1	Total Length drain (m)	517 m
2	Existing drain width (m)	Absent
3	Existing drain condition	Poor drainage condition
4	Topography	Flat plain
5	Water bodies along the drain	Yes
6	Existing outfall	Existing low land
7	Water bodies within 100 m of the drain	Yes
8	Trees within the drain alignment	No
9	Approximate number of trees	Not Available
10	Tree species	Not Available
11	Number of trees to be removed (approximate)	Not Applicable
12	Utilities in the drain alignment	Not Applicable
13	Land use along the drain	Homestead Area
14	Sensitive areas/structures along the drain	No

15	Photograph	

DT-56	**Construction of RCC Drain starting from near Gopalpur Primary school to existing drain (UGIIP-iii) near Pollok shop (Ch.0.00 to 360.00m), & Link: starting from near Badsha Master House to Proposed drain near Motiur Rahman House (Ch.115.00 to 0.00m) at Ward No.09 under Charghat Pourashava, Rajshahi. (Total Length= 475.00m)**	
1	Total Length drain (m)	475 m
2	Existing drain width (m)	Absent
3	Existing drain condition	Poor drainage condition
4	Topography	Flat plain
5	Water bodies along the drain	Yes
6	Existing outfall	Existing low land
7	Water bodies within 100 m of the drain	Yes
8	Trees within the drain alignment	No
9	Approximate number of trees	Not Available
10	Tree species	Not Available
11	Number of trees to be removed (approximate)	Not Applicable
12	Utilities in the drain alignment	Yes(Electric Post)
13	Land use along the drain	Homestead Area
14	Sensitive areas/structures along the drain	No
15	Photograph	

Design Concept roads and drains

1. The design considerations adopted for design were as follows: (i) LGED's Road design manual and standards followed. The road design type 6 for DBC pavement was considered, with some modifications; (ii) guidelines on climate change resilience and adaptation measures were studied and accommodated as necessary; and (iii) existing bitumen finished surface (BFS) and HBB roads were considered for improvement with CC or reinforced cement concrete (RCC) pavement where necessary, with modified design standard. In general, the following are the major features of the roads and drains design guidelines: The proposed site is free from flood. However, there are provisions for drains to effectively drain out rain water and household from the secondary drain and discharge to the primary drainage system of the Pourashava. All the drains are considered to provide covers in front of the sensitive receptors or any other location where required.

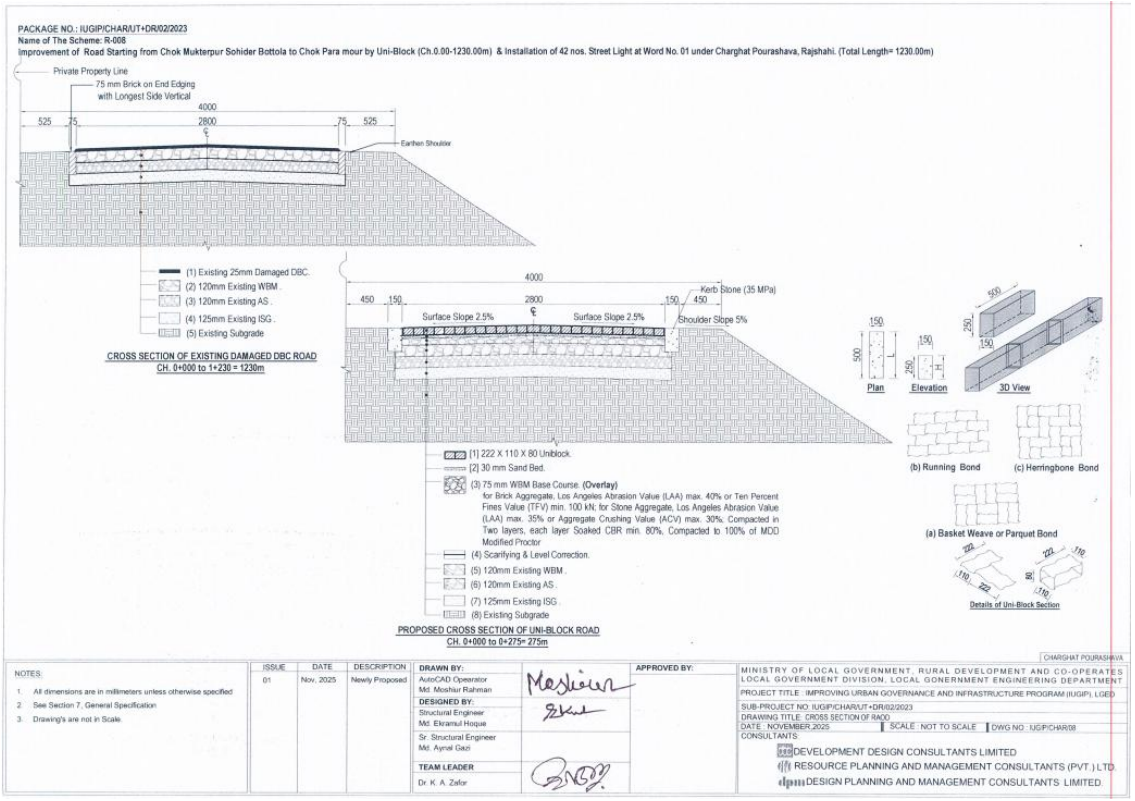


Figure 3: Cross-Section of Road in Pourashava

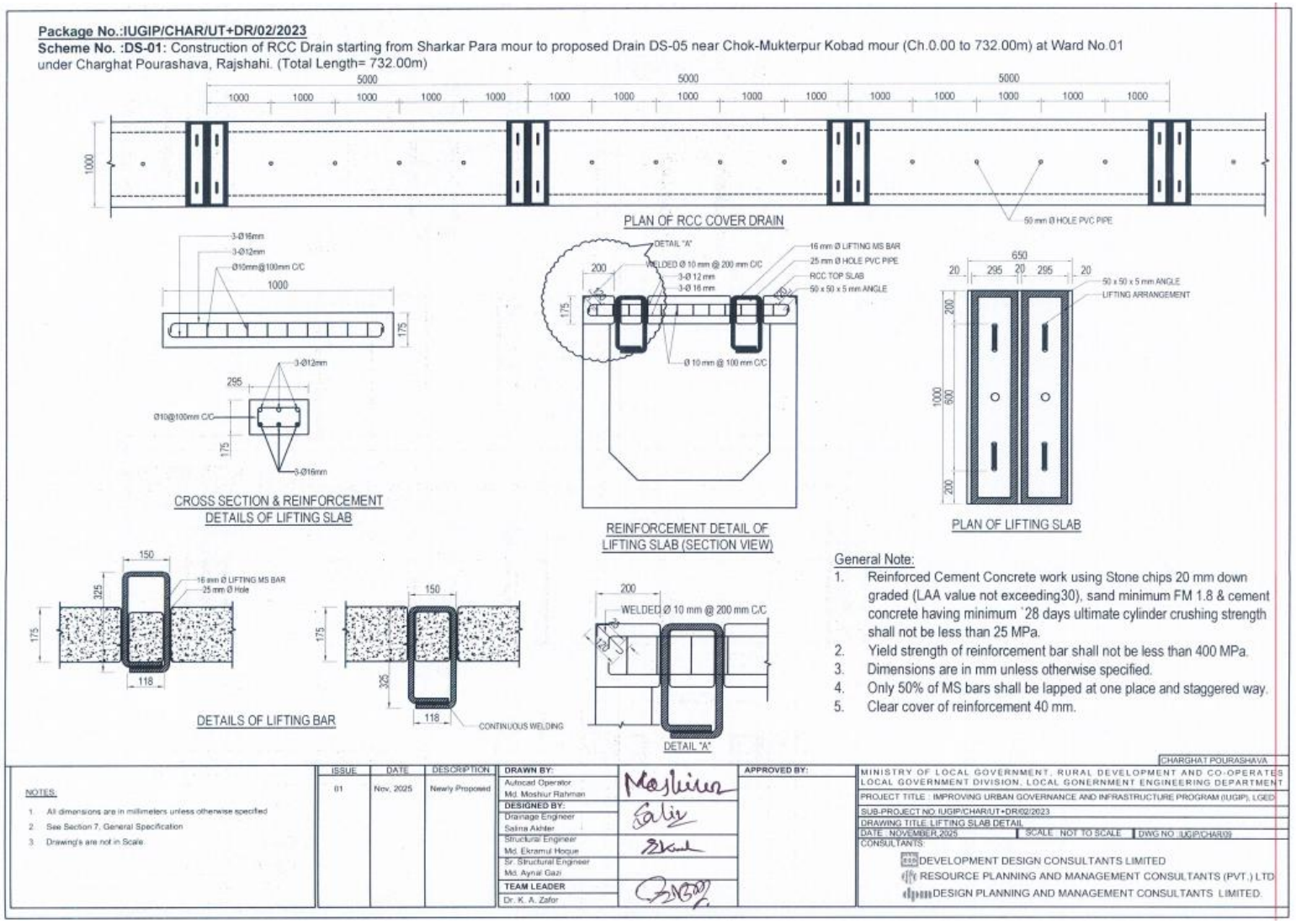


Figure 4: Cross-Section of Drain in Pourashava

3.4 Implementation Schedule

2. Substantial time is required spanning the continuum of sub-project preparation, approval, survey, design & estimate, contract award and contract execution. Efforts need to be made to meticulously follow the schedule should a timely implementation of work is aimed at.
3. Usually, the construction work season in Bangladesh runs from October through May (eight months). Construction works are sometimes impeded for the following reasons.

- Early floods in April/May,
- Late floods in September/October,
- Natural calamities (cyclone/tornado, excessive floods) occur in April/May and October/November.

4. Normally, the best construction period is only for 6 months a year (October to March). The construction period is sometimes squeezed to 4 months due to natural calamities.
5. However, sometimes, based on time constraints or exigency, construction work may even need to be carried out in the monsoon. Besides, whenever possible, simultaneousness of activities can be ascertained and cashed in on and consequently, quantum of work can be maximized through efficient planning and adoption of best available practice.
6. Summing up, over on 12-months period, implementation schedules are advisable to take between March 2026 and January 2027. A tentative time-schedule for implementation (only as indication) is shown Table 7.

Table 7: Sub-project Implementation Schedule

Period	Sub-project Implementation Schedule																					
	2025							2026												2027		
Items of Work	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
Assessment of the Sub-project Supported by MDSC Team in field visit																						
Preparation and approval of Sub-project																						
Compliance of Sub-project and Approval																						
Tendering of Sub-project																						
Evaluation of Sub-project and work order																						
Execution of Physical work																						
Final Inspection and certificate																						

4. DESCRIPTION OF THE ENVIRONMENT

4.1 Methodology used for the sub-project study

7. Data for this study has been primarily collected through comprehensive literature survey, discussion with stakeholder agencies, and field data provided by the Pourashava. The literature survey broadly covered the following:

Secondary Data

i. sub-project details, reports, maps, and other documents available with the ADB, MDS consultants, LGED, and Bagha Pourashava;
ii. relevant acts and extraordinary gazettes, and guidelines issued by Government of Bangladesh agencies; and
iii. Literature on land use, soil, geology, hydrology, climate, socioeconomic profiles, and environmental planning documents collected from Government of Bangladesh agencies and websites.

Primary Data

8. Therefore, several visits to the sub-project sites were made by the persons of Pourashava engineering section and supplied to MDSC to assess the existing environment (physical, biological, and socioeconomic) and gather information with regard to the proposed sites and scale of the proposed sub-project. Demographic information, archaeological and religious places, densely populated pockets, and settlements were gathering from PDP and other documents.

Data Analysis and Interpretation

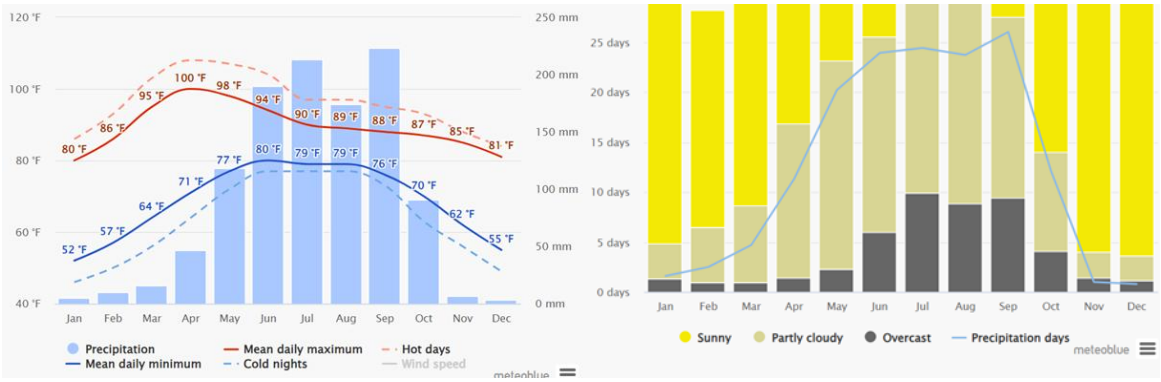
9. The data collected was analysed and interpretations made to assess the physical, biological, and socioeconomic features of the project area. The relevant information is presented in the succeeding paragraphs. The IEE including specific description of the environment and corridor of impact has been updated as necessary based on the final detailed design.

4.2 Physical Characteristics

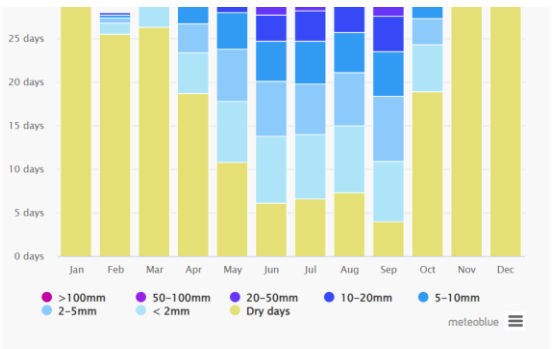
Topography, Geology and Soil

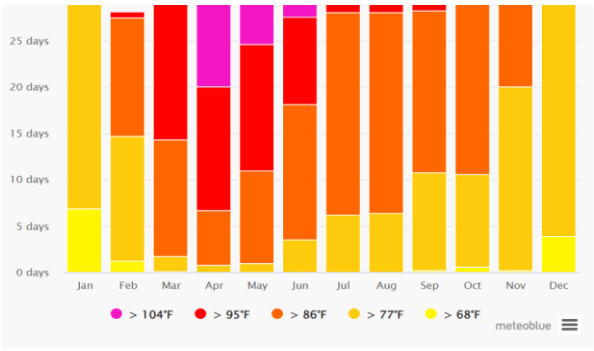
10. The topography of the Pourashava is almost plain. The core area is located on both sides of Rajshahi-Charghat-Ishwardi road and the urban development has taken place mainly along this Highway. The lowest and highest spot values of the study area observed are 16.00 m PWD and 18.48 m PWD respectively. The Pourashava consists of both urban and rural characters. Urban character predominates along the BaneshwarIshwardi road and South-Eastern part of the Pourashava. This urban character gradually changes to rural pattern from South to North. The Southern and the North-Western portions of the Pourashava also have rural characteristics.
11. The Pourashava is situated along the eastern bank of the mighty Padma River. There is a large ‘Char’ (land developed by siltation) between the Padma and the Pourashava area. A dyke was constructed by BWDB for part of the Pourashava western boundary along the river Padma which is damaged due to erosion of the river. In normal annual flood, most of the Pourahava area is free from flooding from the Padma River as those areas are above flood level. Another river named the river Baral, a tributary of the Padma passing through the Pourahava from west to east bifurcating the Pourashava. A regulator was constructed also by BWDB on the river Baral which regulates the water level of the river Baral and prevents flooding in the eastern part of the Pourashava. Only some fringe areas of low agricultural lands are shallow flooded which is required for the paddy cultivation and not serious for the Pourashava.
12. **Climatic Condition**: The climate of the Pourashava area is moderate with the maximum and minimum mean monthly temperature being 30oC and 12.0oC, respectively observed in March and January. Mean annual rainfall is 1542 mm, with most of it occurring during

five months of monsoon, between May to September, which is around 83.74% of the aggregate precipitation. In the winter months of December-January, at times, temperature comes down substantially that at times adds to the woe of the dwellers. Winter is generally dry with little rainfall in the months of December and January of Figure-5.

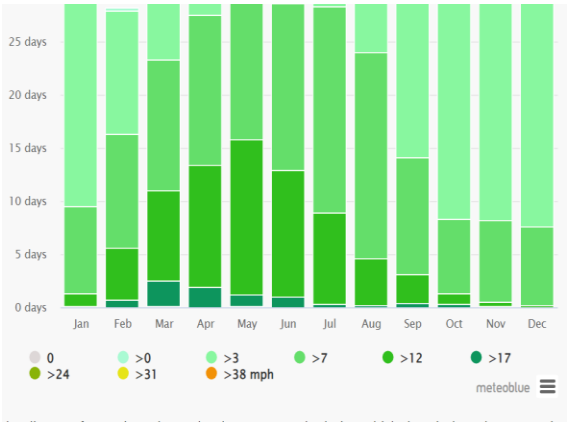


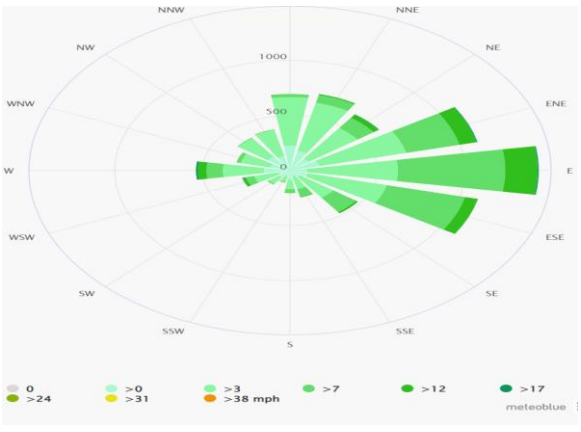
Average Temperature & Precipitation Cloudy, Sunny and Precipitation





Precipitation Amounts Maximum Temperature





Wind Speed Wind Rose

Source: www.meteoblue.com

Figure 5: Historical Climatic Record at Charghat Region

Surface Water and Ground Water

13. The main rivers in and around the Pourashava of the project site are Padma and Charghat Upazila. This river is mainly used for drainage and irrigation. At present, this river is carrying the domestic wastewater and rainfall run-off. Local people do not use the river water and dependent on Tubewell water for drinking purpose. There are large number of

ponds, ditches, low lying agricultural lands as low pockets in Charghat which act as retention basin to delay the maximum floods in the monsoon.

Air Quality & Dust

14. Air pollution also occurs by the odor from the open municipal garbage. There are some dustbins in the Pourashava but people are not aware to dispose their solid garbages in to those dustbins rather than open ground. As a result, open garbage disposal is common and it creates serious odor which ultimately affects the surrounding air. Other than normal, there are no undue air emission sources at the construction site except for limited vehicular emissions from inter-Pourashava traffic that are occasional and limited to a 3–4-meter width on both sides of the roads and drains.
15. The main sources of air pollution are vehicles and non-point sources such as open burning. There are currently no air quality monitoring stations are in operation within the Pourashava limit. The sub-project contractors will measure the baseline air quality prior to commencement of work. The air quality test will be done before commencement of work and will treat as baseline and all other measurements during implementation will be reported as part of EMP implementation. Following table shows the Bangladesh National Ambient Air Quality Standard comparing the WHO Guideline standard. The baseline air quality will be measured by the sub-project contractors prior to commencement of work. The results will be provided in the updated IEE and all other measurements during implementation will be reported as part of EMP implementation.

Bangladesh National Ambient Air Quality Standard comparing the WHO Guideline standard:

	CO	NO_2	SO_2	PM_{10}	$PM_{2.5}$	Temp
	PPM	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	℃
GoB Air Quality Standards	5 (8 hour)	40 (Annual)	80 (24 hour)	150 (24 hour) 50 (Annual)	65 (24 hour) 35 (Annual)	**NSE
WHO Air Quality Standards	-	40	20	20	10	

*Note: * Air Pollution Control Rules (APCR), 2022, Department of Environment (DoE)*

Noise Level

16. Subproject components are in the built-up part of Charghat, with residential, commercial, and institutional establishments. The volume of traffic that passes through these sections is not significant and traffic jams are not frequent. However vehicular movement can be considered as major cause of noise pollution. The baseline noise level will be measured by the subproject contractors prior to commencement of work. The results will be provided in the updated IEE and all other measurements during implementation will be reported as part of EMP implementation.
17. Noise levels should not exceed the national standards for noise or WHO noise level guidelines, whichever is more stringent, or result in increase in background noise level of 3 decibels at the nearest receptor location off-site. The comparative illustration of national standards versus WHO guidelines is in Table here of;

Bangladesh Noise Level Measurement Standard:

Category of areas	Standard determined at day (in DB)	Standard determined at night (in DB)
Silent Zone	50	40
Residential Area	55	45
Mixed Area. (Mainly residential also used for commercial and Industrial purposes)	60	50
Commercial Area	70	60
Industrial Area	75	70

18. The baseline noise level will be measured by the sub-project contractors prior to commencement of work. The results will be provided in the updated IEE and all other measurements during implementation will be reported as part of EMP implementation.

4.3 Biological Characteristics

Ecological Resources

19. The ecological setting is mostly with wetland, homestead and roadside vegetation, etc. Homestead vegetation has a positive effect on improvement of soil moisture through the shading and mulching process. Trees growing at homesteads also provide easy access to fuel wood, fodder and other products. A large number of multipurpose trees (fruit, timber, fodder, medicine) are grown in the area. The most common among them are mango, black berry, palm, banana, jackfruit, lemon, etc. Some Mangrove vegetation has been noticed in the area. Two major types of fauna viz., terrestrial and aquatic fauna have been identified in and around the area.

Flora and Fauna

20. Sub-project components are located in Charghat urban area or in its immediate surroundings that were converted into urban use for years ago, and there is no natural habitat left at these sites. Aquatic floral species grow in rivers, canals, ditches, seasonal wetland and low-lying agricultural lands in submerged, free-floating, or rooted floating states. Aquatic plants, living or growing in water, often form different aquatic communities. The identified aquatic floral species in the study area some terrestrial flora has been observed in areas surrounding the proposed sub-project site; however, there are very few floras present within the sub-project site. Some of these grow naturally, while most have been ported. Generally, terrestrial flora makes a complex ecosystem; with which wildlife develop direct relationship through their ecological niche.

4.4 Socioeconomic Characteristics

21. Charghat has a mixed land use and predominantly consists of agricultural lands and residential lands, and the rest include commercial, industrial, administrative, educational, places of worship, health, recreational, restricted, transportation, miscellaneous, mixed uses, graveyard, open spaces, and water bodies. While the heart of the Pourashava is of high commercial, residential and administrative areas, the fringe areas include mainly low-lying agricultural lands with scattered villages for human settlement.
22. The Main sources of income are; Agriculture 55.05%, non-agricultural labourer 3.96%, industry 0.59%, commerce 18.0%, transport and communication 6.11%, service 6.80%, construction 1.92%, religious service' 0.11%, rent and remittance 0.29% and others 7.17%. The Pourashava with an area of 21.81 km lies within the center of Charghat Upazila. The upazila has a total population of 47,357.

Tribal Communities

23. There is no indigenous or tribal people settlement in the proposed sub-project areas. Therefore, there is no need to take any kind of protective measures for indigenous peoples' safeguard. Historical, Cultural and Archaeological Characteristics
24. There are different views about the origin of the Upazila name. It is learnt that in the past

there exist four steamer stations (Charghat in Bengali) in the Upazila namely, Thana Ghat, Thakur bari Ghat, Steamer Ghat and Babul aler Ghat where steamers from Calcutta used to anchor. It is generally believed that the Upazila name, Charghat might have been derived from the words Steamer Ghat.

5. ANTICIPATED ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

25. Issues for consideration have been raised by the following means: (i) input from interested and affected parties; (ii) desktop research of information relevant to the proposed sub-project; (iii) site visits; and (iv) evaluation of proposed design scope as per MDSC study and potential impacts.
26. The corridors of impact considered include: (i) existing open land by the Pourashava. No additional land is required beyond the roads and drains. Categorization of the sub-project and formulation of mitigation measures have been guided by REA checklist for roads and drains improvement and ADB SPS, 2009.

5.1 Impact Assessment Methodology

Planning and Design Phase

27. Planning principles and detail design considerations have been reviewed and incorporated into the site planning process. Location for the sub-project components will be on properties held by the Pourashava. Access to the sub-project site is through public existing open land.

Sub-project Selection Criteria

28. The project environmental assessment and review framework specifies environmental criteria to avoid or minimize adverse impacts during the identification and finalization of road and drain improvement sub-project. Table 8 summarizes site and design considerations as per final design.

Table 8: Actions to Mitigate Climate Change Impacts and Improve Climate Resilience

Sl. No.	Climate Change Effect	Mitigation Measures
A.	**Climate change effect**	
1.	Increased rainfall quantity and runoff Increased frequency of storms	▪ Improve O & M, organizational capacity, resource allocation, etc. ▪ Work with relevant stakeholders to manage water use and flood discharges more effectively ▪ Improve collection and disposal of waste ▪ Control encroachments ▪ Improve public behaviour through active and prolonged information, education, and communication campaigns to reduce uncontrolled solid waste disposal, encroachments, damage to infrastructure, unregulated development in key areas, etc., supported by enforcement. ▪ Guide wall to protect erosion and sliding for road and drain with adjacent water bodies/ponds
B.	**Impact Factor**	
1.	Construction materials' quality	▪ Choose most durable materials possible, even if higher cost, e.g., concrete, bricks. ▪ Monitor and control construction quality
2.	Rising temperatures	▪ Execute works during most favourable times of year and day. ▪ Monitor and control preparing, placing, and curing concrete and mortar, to ensure placement, etc., during most favourable times. ▪ Use plain high-quality un-rendered brick work and high-quality cement mortar in preference to rendered low-grade bricks ▪ Use sulphate resisting cement in vulnerable locations (higher heat gain during curing) or cement containing fly ash (less heat gain, so preferred).

Sl. No.	Climate Change Effect	Mitigation Measures
3.	Run-off	▪ Use U and trapezoidal section side drains with small low-flow section for low flows ▪ Line side drains to achieve higher discharge without increasing risk of scour, etc. ▪ Considering the effect of climate change the sustainability of sub-project have been increased by 10%. Sizes of infrastructure, where required, have been made large enough to facilitate normal plus additional flow of household, storm water from an increased rainfall due to climate change.

Land Acquisition and Resettlement

29. The proposed sub-project to be constructed in Pourashava owned land and through the existing network. There are no encroachers or residential/ commercial structures in the proposed area as per the study of social and resettlement team. In addition, there is no squatters will be disturbed due to the proposed sub-project as per the social and resettlement assessment. Hence, no negative impacts are envisaged due to the sub-project.
30. The concepts considered in design of the roads & drains sub-project are: (i) prioritizing rehabilitation/ maintenance over new construction; (ii) locating facilities on government/ Pourashava-owned land to avoid the need for land acquisition; (iii) taking all possible measures in design and selection of sites to avoid resettlement impacts; (iv) avoiding where possible locations that will result in destruction/disturbance to historical and cultural places/values; (v) avoiding tree-cutting where possible; (vi) ensuring all planning and design interventions and decisions are made in consultation with local communities and reflecting inputs from public consultation and disclosure for site selection.

Landscape and Existing Utilities

31. The proposed sub-project will be also constructed/rehabilitation/maintenance within existing network. Therefore, investigation before construction and formulation of plan of restoration of existing utilities within shortest time is recommended. The plan must be formulated with coordination with PIU, contractor and the field level construction supervisor. The plan must be shared with the PIU/ MDSC and approved by them.

5.2 EMP Implementation Training

32. Conducting special briefing and/or on-site training for the contractors and workers on the environmental requirement of the project to understand the requirement of the project and implementation of mitigation measures. Often lack of proper training to implement the EMP stipulated in the ‘Bid Document’ leads to mismanaged environmental safeguards. Therefore, EMP training for the contractors, workers and implementing agency is necessary before construction goes on-board. A training (10-15 minutes) needs to be arranged before construction starts with all involved parties: contractor, workers and representatives from Implementing Agency to implement the EMP and therefore is necessary.

Construction Phase

33. In the case of this sub-project (i) most of the individual elements are relatively small and involve straight forward construction, so impacts will be mainly localized and not greatly significant; (ii) most of the predicted impacts are associated with the construction process and are produced because that process is invasive, involving excavation and earth movements; and (iii) being located in the built-up area of the Pourashava, will not cause direct impact on biodiversity values.

34. Although construction of these project components involves quite simple techniques of civil work, the invasive nature of excavation and the sub-project sites in built-up areas of Charghat Pourashava where there are a variety of human activities, will result to temporary impacts to the environment and sensitive receptors such as residents, businesses and the community in general. These anticipated impacts are short-term, site-specific and within a relatively small area. There are no impacts that are significant or complex in nature, or that need an in-depth study to assess the impact. Thus, Charghat Pourashava roads & drains improvement sub-project is unlikely to cause significant adverse impacts.
35. There is sufficient space for a staging area, construction equipment and stockpiling of materials. However, the contractor will need to remove all construction and demolition wastes on a daily basis. The debris accumulated from the demolition of the existing old structure at site will be stored in a safe place in the Pourashava own compound.

Worker Camps

36. To accommodate the needs of the workforce, the contractor should provide suitable housing, adequate supplies of potable water, and toilet and bathing facilities within the housing area. Onsite facilities for preparing food need to be provided, or food service contracted. The contractor should provide means for disposing of wastewater from toilets, baths and food preparation areas either through a septic tank or through sock well or holding tank with removal by vacuum truck. Solid waste should be collected at waste bins and disposed of properly offsite. The labour camp should be located at a distance from any nearby community and workers transported daily to the construction sites. Temporary lodging for workers should not be set up along the alignments where piping is being installed. The labour camp should be set up at a selected and approved location for the duration of the contract, and located such that it does not interfere with or cause a nuisance for the local community. Complete closure of the camp is required at the end of the work, including removal of any underground tanks and above-ground structures.

Site and Route Maintenance

37. The contractor should plan haul routes to avoid congested areas and narrow roads, and schedule transportation to avoid peak traffic periods. Speed limits and other traffic rules need to be strictly enforced among drivers. Traffic detours need to be identified and marked in the event they are necessary to maintain traffic flow through the construction zone. Flagmen need to be posted at the start and finish of construction areas as necessary to direct the movement of traffic. Movable sanitary facilities should be provided at the site and kept clean, free of odors and usable. No materials should be stored onsite for longer than a day before their use. Excess materials should be removed after a segment is complete. The contractor should avoid trenching where damage might occur to buildings, and provide shoring and backfill with sand/cement admixture to prevent caving. The contractor should avoid stockpiling earth and construction materials in areas subject to flooding and flowing water. Loss of fuel oil, engine oil and other types of pollutants to the soil or to drainage courses will not be tolerated.

Topography, Geology and Soils

38. Significant amount of gravel, sand, and cement will be required for this sub-project. Extraction of construction materials may cause localized changes in topography and landforms. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.
39. Utilize readily available sources of materials. If contractor procures materials from existing burrow pits and quarries, ensure these conform to all relevant regulatory requirements. Borrow areas and quarries (If these are being opened up exclusively for the sub-project) must comply with environmental requirements, as applicable. No activity will be allowed until formal agreement is signed between PIU, landowner and contractor.

Surface Water Quality

40. Temporary trenching and excavation, run-off from stockpiled materials, and contamination from fuels and lubricants may result to silt-laden runoff during rainfall that may cause siltation and reduction in the quality of adjacent bodies of water. The Atrai River near the road and surface water pollution is expected due to the construction activities. Therefore, the expected impacts are minor negative and short term, site-specific within a relatively small area and reversible by mitigation measures.

- Prepare and implement a spoils management plan (see Appendix 08 for outline).
- Prioritize re-use of excess spoils and materials in construction activities. If spoils will be disposed, consult with Charghat local authority on designated disposal areas.
- All earthworks must to be conducted during dry season to maximum extent possible to avoid the difficult working conditions that prevail during monsoon season such as problems from runoff.
- Location for stockyards for construction materials shall be identified at least 300m away from watercourses.
- Place storage areas for fuels and lubricants away from any drainage leading to water bodies.
- Take all precautions to minimize the wastage of water in the construction activities.
- Take all precautions to prevent entering of wastewater into streams, watercourses, or irrigation system. Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies.
- Ensure diverting storm water flow during construction shall not lead to inundation and other nuisances in low-lying areas.
- While working across or close to any water body, the flow of water must not be obstructed. Ensure no construction materials like earth, stone, or appendage are disposed of in a manner that may block the flow of water of any watercourse and cross drainage channels.
- Monitor water quality according to the environmental management plan.

Groundwater Quality

41. Increased demand of groundwater is anticipated during the construction phase for construction activities and domestic purposes. Uncontrolled extraction of water may also affect availability of waters to locals. In addition to that, construction waste, if left unattended will result in forming leachate which will percolate through the soil strata and will reach underground water table and hence, will end up contaminating it. Mitigation measures will include

- Pumping of groundwater should be from deep aquifers of more than 25m to supply arsenic free water. Safe and sustainable discharges are to be ascertained prior to selection of pumps.
- Tube wells will be installed with due regard for the surface environment, protection of groundwater from surface contaminants, and protection of aquifer cross contamination.
- All tube wells, test holes, monitoring wells that are no longer in use or needed shall be properly decommissioned.
- Protect groundwater supplies of adjacent lands.

Air Quality & Dust

42. Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants (such as COx, SOx, PMs, NOx, and HCs) which will affect people who live and work near the sites. Different activities regarding the machinery movement and other works generate dust and impair the air quality. The impacts are negative but short-term, site- specific within a relatively small area and reversible by mitigation measures.

- Damp down exposed soil and any sand stockpiled on site by spraying with water when necessary, during dry weather;
- Use tarpaulins to cover soils, sand and other loose material when transported by trucks.
- Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free.
- Short-term arrangements to control dust through provision of windscreens, water sprinklers, and dust extraction systems shall be provided at all hot-mix plants, batching plants, and crushers (if these establishments are being set up exclusively for the sub-project).
- Water will be sprayed to control the dust, which is the main way to suppress dust in the working site.
- Debris materials should be transported through truck covered by tarpaulin.
- Apply water every 4 hours to the area within 30m of structures being demolished, to reduce vehicle track out.
- Apply water to disturbed soils after demolition is completed or at the end of each day of clean up
- Prohibit demolition activities when wind speeds exceed 30 kph.
- Limit on-site vehicle speeds (on unpaved roads) to 20 kph.
- Provide jute made cloth around the structures to be demolished.
- Monitor air quality.

Acoustic Environment

43. Construction activities will be far from settlements, far from schools and areas with small-scale businesses. Temporary increase in noise level and vibrations may be caused by excavation equipment and the transportation of equipment, materials, and people. However, the proposed sub-project situated out of core area and impact is short-term, site-specific and within a relatively small area. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.

- Involve the community in planning the work program so that any particularly noisy or otherwise invasive activities can be scheduled to avoid sensitive times.
- Plan activities in consultation with Pourashava local authority so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance.
- Use of high noise generating equipment shall be stopped during night time.
- Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach;
- Utilize modern vehicles and machinery with the requisite adaptations to limit noise and exhaust emissions and ensure that these are maintained to manufacturers' specifications at all times.
- All vehicles and equipment used in construction shall be fitted with exhaust silencers. Use silent-type generators (if required).
- Monitor noise levels. Maintain maximum sound levels not exceeding 85 decibels (dBA) when measured at a distance of 10m or more from the vehicle/s.
- If it is not practicable to reduce noise levels to or below noise exposure limits, the contractor must post warning signs in the noise hazard areas. Workers in a posted noise hazard area must wear hearing protection.
- Identify any buildings at risk from vibration damage and avoiding any use of pneumatic drills or heavy vehicles in the vicinity. Complete work in these areas quickly.

Aesthetics

44. The construction activities do not anticipate any cutting of trees but will produce excess excavated earth (spoils), excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers, spoils, oils, lubricants and other similar items. The impacts are negative but short-term, site-specific within a relatively

small area and reversible by mitigation measures.

- Prepare a debris disposal plan.
- Remove all construction and demolition wastes on a daily basis.
- Coordinate with Pourashava local authority for beneficial uses of excess excavated soils or immediately dispose to designated areas. Avoid stockpiling of any excess spoils.
- All vehicles delivering fine materials to the site and carrying debris for disposal shall be covered to avoid spillage. All existing roads used by vehicles of the contractor, shall be kept clear of all dust/mud or other extraneous materials dropped by such vehicles.
- Lighting on construction sites shall be pointed downwards and away from oncoming traffic and nearby houses.
- In areas where the visual environment is particularly important or privacy concerns for surrounding buildings exist, the site may require screening. This could be in the form of shade cloth, temporary walls, or other suitable materials prior to the beginning of construction.
- The site must be kept clean to minimize the visual impact of the site. Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas.

Biodiversity

45. Activities are being located in the built-up area of Pourashava. There are no protected areas in or around sub-project sites, and no known areas of ecological interest. Preliminary design shows there are no trees at the sites that need to be removed.

- Check if tree-cutting will be required during detailed design stage. No trees, shrubs, or groundcover may be removed or vegetation stripped without the prior permission of the environment management specialist.
- All efforts shall be made to preserve trees by evaluation of minor design adjustments/ alternatives (as applicable) to save trees.
- Special attention shall be given for protecting giant trees and locally-important trees (with religious importance) during implementation.
- Prevent workers or any other person from removing and damaging any flora (plant/ vegetation) and fauna (animal) including fishing in any water body in the sub-project vicinity.
- Prohibit employees from poaching wildlife and cutting of trees for firewood.
- Implement compensatory plantation for trees lost at a rate of 2 trees for every tree cut. Maintain the saplings for the duration of contract.

Traffic Congestion

46. Hauling of construction materials and operation of equipment on-site can cause traffic problems. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.

- Follow the traffic management plan given in Appendix 5 of this report.
- Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of
- delivery sites.
- Maintain safe passage for vehicles and pedestrians throughout the construction period.
- Schedule truck deliveries of construction materials during periods of low traffic volume.
- Erect and maintain barricades, including signs, markings, flags and flagmen informing diversions and alternative routes when required.
- Notify affected sensitive receptors by providing sign boards informing nature and duration of construction activities and contact numbers for concerns/complaints.
- Leave spaces for access between mounds of soil.

- Consult businesses and institutions regarding operating hours and factoring this in work schedules. Ensure there is provision of alternate access to businesses and institutions during construction activities, so that there is no closure of these shops or any loss of client age.
- Ensure any damage to properties and utilities will be restored or compensated to pre-work conditions.

Socio-economic Status

47. Work force will be required during the 12-month construction stage. This can result to generation of contractual employment and increase in local revenue. Thus, potential impact is positive and long-term.

- Employ at least 50% of labor force from communities in the vicinity of the site. This will have the added benefit of avoiding social problems that sometimes occur when workers are imported into host communities, and avoiding environmental and social problems from workers housed in poorly serviced camp accommodation.
- Secure construction materials from local market.

Existing Amenities for Community Welfare

48. Although construction of sub-project components involves quite simple techniques of civil work, the invasive nature of excavation and the sub-project sites being in existing networks of Charghat Pourashava where there are a variety of human activities, will result to impacts to the sensitive receptors such as residents, businesses and the community in general. Road widening may also damage existing infrastructure (such as trees and electricity poles, etc.) located alongside the roads. The impacts are minimal but short-term, site-specific within a relatively small area and reversible by mitigation measures.

- Obtain details from Pourashava nature and location of all existing infrastructure, and plan excavation carefully to avoid any such sites to maximum extent possible;
- Integrate construction of the various infrastructure sub-projects to be conducted in Bagha (road & drain) so that different infrastructure is located on opposite sides of the road where feasible and roads and inhabitants are not subjected to repeated disturbance by construction in the same area at different times for different purposes.
- Consult with local community to inform them of the nature, duration, and likely effects of the construction work, and to identify any local concerns so that these can be addressed.
- Ensure any damage to properties and utilities will be restored or compensated to pre-work conditions.

Community Health and Safety

49. The public should be barred from construction areas, and excavations should be barricaded and marked. Paths of access and passage for vehicles and pedestrians should be clearly marked through the work zone. The contractor should minimize use of heavy equipment in congested areas, conduct activities during daylight hours, and apply water to suppress dust as needed. In heavily trafficked areas such as markets, the contractor should increase the work force to complete construction quickly, reduce dust by removal of excess earth, and avoid obstructing the paths of travel for pedestrians and vehicles. The contractor should minimize downtime of existing water supply, limit shutdowns to less than four hours, and notify the public in advance to store water as necessary.

50. Construction works will impede the access of residents and business in limited cases. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.

- Contractor's activities and movement of staff will be restricted to designated construction areas.
- Consult with Pourashava local authority on the designated areas for stockpiling of soils, gravel and other construction materials.

- If the contractor chooses to locate the work camp/storage area on private land, he must get prior permission from the environment specialist and landowner.
- Use small mechanical excavators to attain faster trenching progress. Crusher will be used for stone and concrete breaking.
- Under no circumstances may open areas or the surrounding bushes be used as a toilet facility.
- Recycling and the provision of separate waste receptacles for different types of waste shall be encouraged.
- A general regard for the social and ecological well-being of the site and adjacent areas is expected of the site staff. Workers need to be made aware of the following general rules: (i) no alcohol/drugs on site; (ii) prevent excessive noise; (iii) construction staff are to make use of the facilities provided for them, as opposed to ad hoc alternatives (e.g. fires for cooking, the use of surrounding bushes as a toilet facilities); (iv) no fires permitted on site except if needed for the construction works; (v) trespassing on private/commercial properties adjoining the site is forbidden; (vi) other than pre-approved security staff, no workers shall be permitted to live on the construction site; and (vii) no worker may be forced to do work that is potentially dangerous or that he/she is not trained to do.
- Interested and affected parties need to be made aware of the existence of the complaints book and the methods of communication available to them. The contractor must address queries and complaints by: (i) documenting details of such communications; (ii) submitting these for inclusion in complaints register; (iii) bringing issues to the environmental management specialist's attention immediately; and (iv) taking remedial action as per environment specialist's instruction.
- The contractor shall immediately take the necessary remedial action on any compliant/grievance received by him and forward the details of the grievance along with the action taken to the environment specialist within 48 hours of receipt of such compliant/grievance.

Occupational Health and Safety

51. The Contractor should have a basic safety and health plan in place for workers, in which workers are required to wear personal protective gear suitable to the type of work being performed and a worker is suitably trained (or experienced) in the work he/she is assigned to do. Emergency care should be available on call. The Contractor should maintain a record of accidents, which should be reviewed on occasion with the supervising engineer. The contractor should maintain a high standard of safety in the performance of work. Workers need to be informed of potential risks associated with activities conducted in the vicinity of moving equipment, and workers should not be allowed to enter deep trenches unless they are properly shored.
52. There is invariably a safety risk when construction works such as excavation and earthmoving are conducted in urban areas. Workers need to be mindful of the occupational hazards which can arise from working height and excavation works. Potential impacts are negative and long term but reversible by mitigation measures.

- Comply with requirements of Government of Bangladesh labor law of 2006 & rules 2015 and all applicable laws and standards on workers' health and safety (H&S).
- Ensure that all site personnel have a basic level of environmental awareness training.
- Procedure and implement a site H&S plan which include measures as: (i) excluding the public from worksites; (ii) ensuring all workers are provided with and required to use personal protective equipment (reflectorized vests, footwear, gloves, goggles and masks) at all times; (iii) providing (H&S) training for all site personnel; (iv) documenting procedures to be followed for all site activities; and (v) maintaining accident reports and records.
- Arrange for readily available first aid unit including an adequate supply of sterilized dressing materials and appliances.

- Maintain necessary living accommodation and ancillary facilities in functional and hygienic manner in work camps. Ensure (i) uncontaminated water for drinking, cooking and washing, (ii) clean eating areas where workers are not exposed to hazardous or noxious substances; and (iii) sanitation facilities are available at all times.
- Provide medical insurance coverage for workers;
- Provide H&S orientation training to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection and preventing injuring to fellow workers;
- Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted;
- Ensure moving equipment is outfitted with audible back-up alarms;
- Mark and provide signboards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to and easily understood by workers, visitors and the general public as appropriate; and
- Disallow worker exposure to noise level greater than 85 dBA for duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively.

5.3 Operation & Maintenance Phase

53. In the operations and maintenance (O & M) phase, the road and drain system will operate with routine maintenance, which should not affect the environment. The infrastructures will need to be repaired from time to time, but environmental impacts will be much less than those of the construction period as the work will be infrequent, affecting small areas only. O & M will be the responsibility of Pourashava local authority, which will be given training by this sub-project.
54. Routine repairs and maintenance works will be very small in scale, to conducted manually by small teams of men and works will be very short in duration thus will not cause significant physical impacts.

Surface/Waste Water Quality

55. The surface water bodies may get flooded and polluted due to uncontrolled release of contaminated storm-water/road runoff from roads & drains surfaces. The pollutants associated with the water body include, P^H, DO, TDS etc. On the other hand, the surface water quality at the drain's outfall location of all the existing drains within this Pourashava might be impacted if maintenance of drains will not be taken regularly. Water quality of the river not good as per visual observations but no solid waste was observed. Also, it was noticed that no illegal connection is permitted by the Pourashava and it should be followed in the future. The Pourashava have to clean the drains regularly and have to ensure that no other source of water except rainfall and household water to the drains. In addition to the maintenance, the waste water quality has to be tested regularly from the outfall location and have to take mitigation measures accordingly if there any ascendance of national standard.

Air Quality

56. Air emissions of common air contaminants and fugitive dust may be elevated in proximity to active work sites may include gaseous for disinfection processes. Develop and implement a prevention program that includes identification of potential hazards, written operating procedures, training, maintenance, and accident investigation procedures.

Acoustic Environment

57. Temporary increase in noise level and vibrations is expected. The impacts are minor negative and long-term, site-specific within a relatively small area reversible by mitigation

measures. Plan activities in consultation with Pourashava local authority so that activities with the greatest potential to generate noise are conducted during periods of the day that will result in least disturbance.

Biodiversity

58. All activities will be in the built-up area of Pourashava. There are no protected areas in or around sub-project site and no known areas of ecological interest. Trees will be removed or vegetation stripped without the prior permission, Because Pourashava own land. The planted trees will be nurtured by the roadside Pourashava O & M budget.

Solid Waste

59. The main causes of non-functionality of the existing drainage system are clogging the drains by the solid waste and inadequate design in some cases. Solid waste generated from the sub-project activities may contribute to the risk of clogging of drains. However, proper solid waste management facilities should be provided in the sub-project areas. Awareness raising camps and demonstration including the house owners regarding the waste management and their roles in keeping the Paura drains clean through daily activities. Paura authority should also remove the waste materials from drain side within the shortest time and periodic monitoring by the designated person of Pourashava.

Table 9: Scheme specific impacts & mitigations

PDP SL.	Name of schemes	Length (m)	Existing Conditions & Impacts	Mitigations
R-009	Improvement of Road Starting from Chok Mukterpur Sohider Bottola to Chok Para mour by Uni-Block (Ch.0.00-1230.00m) & Installation of 42 nos. Street Light at Word No. 01 under Charghat Pourashava, Rajshahi. (Total Length= 1230.00m)	1358.00	• Existing road is in poor condition with surface deterioration. • Seasonal waterlogging occurs during the rainy season. • Road improvement may generate dust, noise, construction waste and temporary traffic obstruction. • Works are mainly along residential areas and may temporarily affect access. • No significant impact on existing trees or temporary/permanent structures is anticipated. • Removed road materials require proper reuse/disposal.	• Install warning signs, caution tape and safety barriers. • Maintain pedestrian and vehicular access to residences. • Provide temporary access where required. • Spray water on exposed surfaces during dry periods. • Properly collect, transport and dispose/reuse construction debris. • Restrict works to the approved right-of-way. • Avoid unnecessary vegetation removal. • Maintain site housekeeping.
R-599	Improvement of Road starting from near Chipara Joinal house to near Hothathpara Josna House by Uni-block (Ch.0.00 to 310.00m) & Installation of 11 nos. Street Light at Ward No.05 under Charghat Pourashava,	397.00	• Existing road is in poor condition. • Road serves predominantly residential areas. • Construction may cause temporary dust, noise, waste and movement obstruction. • Household access may be temporarily disturbed. • No impact on temporary/permanent structures is anticipated.	• Provide caution tape, warning signs and barriers. • Maintain access to residences. • Spray water during dry weather. • Properly manage construction waste. • Limit works to designated areas. • Minimize noise near

PDP SL.	Name of schemes	Length (m)	Existing Conditions & Impacts	Mitigations
	Rajshahi. (Total Length= 310.00m)			residential premises. • Reinstate disturbed access areas.
DS-03	Construction of RCC Drain starting from Mondol Para Freedom Fighter Siddik house to existing drain Dofadarpara near Saban house (Ch.576.00 to 0.00m), and Link Drain: starting from near Siraj house to Proposed drain near Alal Pond (Ch.230.00 to 0.00m) at Ward No.02 under Charghat Pourashava, Rajshahi. (Total Length= 806.00m)	806.00	• Existing drainage facility is inadequate/poorly maintained. • Seasonal waterlogging occurs due to inadequate conveyance. • Drain construction may temporarily obstruct pedestrian/local traffic. • Excavation may generate spoil, dust and debris. • Open excavation presents safety risks. • Scheme is mainly along residential areas. • No significant impact on trees or structures is anticipated. • Outfall connects to the existing drainage system toward the Baral River.	• Barricade open excavations and install warning signs. • Maintain safe access to residences. • Properly manage excavated spoil. • Prevent spoil and construction waste entering drains/water bodies. • Control dust by water spraying. • Provide temporary crossings where needed. • Ensure hydraulic continuity with existing drains. • Protect the receiving water body. • Restore disturbed areas.
DS-04	Construction of RCC Drain starting from Chok Mukterpur Sohid er Bottola to existing drain near Mahfuj Shop (Ch.0.00 to 1114.00m) at Ward No.01 under Charghat Paurashava, Rajshahi. (Total Length= 1114.00m)	1114.00	• Existing drainage system is in poor condition/inadequate capacity. • Waterlogging occurs during the rainy season. • Excavation and RCC construction may generate dust, spoil, noise and waste. • Temporary obstruction to pedestrian/local traffic may occur. • Open trenches may create safety hazards. • No significant impact on trees or structures is anticipated. • Outfall is directed toward the Padma River.	• Install barricades, warning signs and caution tape. • Maintain access to residences/community facilities. • Manage and dispose of excavated spoil at approved locations. • Prevent spoil, cement slurry and waste entering the river/drains. • Spray water during dry conditions. • Provide temporary pedestrian crossings. • Ensure proper outfall and control erosion/scouring. • Avoid direct construction wastewater discharge to the river. • Reinstate disturbed areas.

PDP SL.	Name of schemes	Length (m)	Existing Conditions & Impacts	Mitigations
DS-06	Construction of RCC Drain starting from near Safi Councilor Pond to Proposed Drain (DS-03) near Banir mour (Ch.0.00 to 480.00m) at Ward No.01 under Charghat Paurashava, Rajshahi. (Total Length= 480.00m)	480.00	• Existing drainage facilities are in poor condition and insufficient for stormwater conveyance. • Seasonal waterlogging occurs. • Excavation may affect pedestrian movement and household access. • Spoil, dust, noise and construction waste may be generated. • Open excavations may create safety risks. • Scheme is mainly within residential areas. • No significant impact on trees or structures is anticipated.	• Install barricades, caution tape and warning signs. • Maintain access to residences and community facilities. • Provide temporary crossings where required. • Properly stockpile and dispose of excavated materials. • Prevent debris from blocking existing drains. • Spray water for dust control. • Minimize disturbance near the temple/religious premises. • Ensure connection with existing drainage. • Restore disturbed areas.
DS-16	Construction of RCC Drain starting from existing Culvert near Patan tola to existing drain (UGIIP-iii) near Jamal Mir House (Ch.0.00 to 517.00m) at Ward No.04 under Charghat Paurashava, Rajshahi. (Total Length= 517.00m)	517.00	• Seasonal waterlogging occurs during the rainy season. • Existing drainage capacity is inadequate in portions of the alignment. • Construction may generate dust, noise, spoil and waste. • Temporary disruption to pedestrian/local traffic may occur. • Open excavation may pose safety risks. • Alignment passes residential/community areas near educational and religious facilities. • No significant impact on trees or structures is anticipated.	• Provide barriers, warning signs and caution tape. • Maintain access to the madrasah, mosque, residences and businesses. • Apply additional safety measures near educational/religious facilities. • Control dust by water spraying. • Properly manage excavated spoil and debris. • Prevent obstruction of existing drainage. • Provide temporary pedestrian access/crossings. • Restore affected surfaces.
DT-56	Construction of RCC Drain starting from near Gopalpur Primary school to existing drain (UGIIP-iii) near Pollok shop (Ch.0.00 to 360.00m), & Link:	475.00	• Existing drainage condition is poor/inadequate. • Seasonal waterlogging occurs during heavy rainfall. • Construction may generate dust, noise, spoil and waste. • Temporary obstruction to pedestrian/vehicular movement may occur. • Open excavation may create	• Install warning signs, barricades and caution tape. • Maintain access to residences, shops and mosque. • Provide temporary crossings where necessary. • Control dust by water

PDP SL.	Name of schemes	Length (m)	Existing Conditions & Impacts	Mitigations
	starting from near Badsha Master House to Proposed drain near Motiur Rahman House (Ch.115.00 to 0.00m) at Ward No.09 under Charghat Pourashava, Rajshahi. (Total Length= 475.00m)		safety hazards. • Alignment passes mainly through residential and local commercial areas. • No significant impact on trees or structures is anticipated. • Connection to the RHD culvert requires proper hydraulic integration.	spraying. • Properly manage excavated soil and debris. • Prevent blockage of existing drainage/road crossings. • Coordinate works near the RHD culvert to maintain traffic and drainage flow. • Ensure proper hydraulic connection. • Reinstate disturbed surfaces.

Cumulative Impact Assessment

60. The cumulative impact assessment examined the interaction between the sub-project's residual effects (i.e., those effects that remain after mitigation measures have been applied) and those associated with other past, existing and reasonably foreseeable future sub-projects or activities. The interaction of residual effects associated with multiple projects and/or activities can result in cumulative impacts, both positive and negative. The project's potential cumulative effects were considered with respect to valued components in environmental and socioeconomic categories, in four areas:

i. of any potential residual project effects that may occur incrementally over time;
ii. consideration of other known relevant projects or activities within the specified study area boundaries, even if not directly related to the project;
iii. potential overlapping impacts that may occur due to other developments, even if not directly related to the proposed sub-project; and
iv. future developments that are reasonably foreseeable and sufficiently certain to proceed.

61. Location and sitting of the proposed infrastructures were considered to reduce impacts. Detailed designs integrate a number of measures, both structural and non-structural, to mainstream climate resilience into the Bagha road & drain sub-project, including (i) designed to the current best practice standard codes; (ii) built that the floods do not damage them; and (iii) side drains are to be kept free from wastes and siltation.

Surface Water Quality

62. Surface water quality will not be impacted like present trend due to improved road and drain facility. Illegal or unwanted connections to the improved drains will be controlled and entrance of solid wastes will be prohibited by providing nets at required intervals.

5.4 Socioeconomic and Socio-community

63. Concerns on existing provisions for pedestrians and other forms of transport will occur spatially during construction and O & M activities. Since the sub-project will be improvement of existing infrastructures, it will not conflict with existing or planned land use. However, following improvement in infrastructures and services, added residential developments, commercial, and business facilities and increased densities are expected to develop and enhance Charghat Pourashava. This can be considered a long-term cumulative benefit of the sub-project.
64. Upon completion of the sub-project, the socio-community will be the major beneficiaries. With the improved traffic management, they will be provided with reliable and climate-

resilient road & drain. In addition to improved environmental conditions, the sub-project will reduce occurrence of air borne-related diseases and exposure to climate extremes. People would spend less on healthcare and lose fewer working days due to illness, so their economic status should also improve, as well as their overall health. Beyond reducing the water-borne and water-washed diseases, providing better access to improved municipal services confers many other diverse benefits ranging from the easily identifiable and quantifiable (costs avoided, time saved) to the more intangible and difficult to measure (convenience, well-being). One set of the benefits related to health impacts that are relatively easy to quantify, are the cost-offsets (costs avoided due to less illness). Cost savings in health care are mainly due to the reduced number of treatments of air borne diseases cases. In addition, patients will avoid costs incurred by seeking treatment, including expenditures on care, drugs and transport and the opportunity costs of time spent on seeking care. Another set of benefits related to less illness are the avoided days lost, with respect to formal or informal employment, other productive activities in the household or school attendance. These are considered a long-term cumulative benefit.

Induced Traffic and Vehicle Emissions

65. The project is likely to induce additional vehicle ownership and related emissions. This is inevitable with a road designed and maintenance to improve the economic situation of the region, and therefore its use is a measure of its success. Given the nature of the road, and lack of infrastructure development, the additional vehicle emissions induced by the project are not considered to be locally significant; however, they will contribute to global emissions.

Analysis of Alternatives

66. Analysis of alternatives has been carried out for 'with' and 'without' the project, location selection, project implementation scheduling and materials usage in the detailed design and Improvement/Construction of Roads 1755.00m in 02 locations, RCC Drain 3392.00m in 05 locations and Installation of 60 nos Street Light & 100 nos Tree plantation with EMP at Charghat Pourashava, Rajshahi District.

Material Usage and Sustainability Considerations

67. Under the circumstances, this subproject has been proposed as comprising different infrastructure development under different components. The sub-project components aim at upgrading and expansion of urban services, including (i) one connecting road from Pourashava to the national highway and other neighboring industrial & commercially important places for better transportation; (ii) three roads with flood management schemes. The proposals are entirely concerned with activities that address the most acute needs for better urban services for inhabitants of the Pourashava. Different infrastructure development components under the subproject proposed for development are consistent. Rehabilitation, construction, expansion of the basic infrastructures to improve transportation facilities, removing waterlogging and drainage congestions, increasing pure water supply and improving sanitation system, planned solid waste management etc. to improve the environment and sustain an ecological balance and quality of livelihood. Hence project scenario is highly desirable. While the 'with sub-project scenario' may have negative environmental impacts from construction activities, the environmental impacts are projected to be temporary and short-term in nature. The impacts during construction and operation phase are not irreversible and can be readily mitigated.
68. Vulnerabilities of Pourashavas to climate risks include (i) low-lying topography subject to flooding and waterlogging; (ii) changes in the landscape due to construction and urban expansion, with reduced capacity to buffer impacts from floods and landslides; (iii) poor awareness of vulnerable populations; and (iv) weak institutional capacities and strategic planning of Pourashavas in managing climate risks. Overall, Pourashavas need to address climate risks better through improved planning, zoning, and sustaining climate-

resilient and gender responsive infrastructure and services.

69. It is clear from the above that without project scenario is undesirable and the location of Sub-project has been strategically selected with only short-term and reversible environmental impacts. To make the project outcome and outputs sustainable, necessary measures have been included in the project design.

6. INFORMATION DISCLOSURE, CONSULTATION AND PARTICIPATION

70. The development and construction of any project will impact on the surrounding human and physical environment and will have beneficial or adverse effects. It is therefore essential that the community can fully understand the project, have the opportunity to express their views and to become directly involved in the project's overall decision-making process.
71. Public authority developers must take account of the community's views and include some useful suggestions to improve the sub-project. This may include suggestions to help further develop environmental protection measures thereby reducing environmental pollution, reducing the loss of environmental resources and improving the project's environmental and social benefits, thus helping achieve more sustainable development.
72. In accordance with the requirements of the ADB as defined in the SPS 2009, the ''borrower will carry out meaningful consultation with affected people and other concerned stakeholders, including civil society, and facilitate their informed participation'' The following activities have therefore been carried out in his project in accordance with the ADB requirements.

6.1 Purpose of Public Participation

73. The public participation process included (i) identifying interested and affected parties (stakeholders); (ii) informing and providing the stakeholders with sufficient background and technical information regarding the proposed development; (iii) creating opportunities and mechanisms whereby they can participate and raise their viewpoints (issues, comments, and concerns) with regard to the proposed development; (iv) giving the stakeholders feedback on process findings and recommendations; and (v) ensuring compliance to process requirements with regards to the environmental and related legislation.
74. MDS Consultant safeguard team conducted public consultations from 21-23 October 2025. The objective of the meetings was to appraise the stakeholders about environmental and social impacts of the proposed sub-project and safeguards to mitigate the same. A questionnaire was designed and environmental information was collected. Key respondents included project-affected persons, who may suffer temporary access disruptions during construction activities from the sub-project area and daily commuters consulted randomly. Issues discussed and feedbacks received are given in Table 10. The photographs and the list of participants along with details of date, time, and location is given in Appendix 6 and Appendix 7 respectively. The environmental concerns and suggestions made by the participants were listed, and discussed, and suggestions accordingly incorporated in the EMP. These include speedy construction works to ensure low impacts to community during road closures and local employment.
75. The Project has already organized consultation training program for all staff working in IUGIP, consultants and Pourashava staff on safeguard policies. The aim of the consultation programme was to inform all stakeholders about the importance of the safeguard policies and their implementation at the design construction and operation stage. Field consultations were conducted with local people. Consultations by the PIU supported by the Consultants and the PMU include the following:

- Focus-group discussions (FGDs) and Workshop with affected persons and other stakeholders (including women's groups, NGOs and CBOs) to hear their views and concerns, were conducted and concerns were addressed in sub-project design.
- Structured consultation meetings with the institutional stakeholders (government bodies and NGOs) to discuss and approve key aspects of the sub-project.

Table 10: Outcome of the Public Consultation

Sl. No.	Key Issues/Demands	Perception of Community	Action to be Taken
1	Awareness of the project including coverage area	Yes, they are aware of the project that will be improved.	No need to take action.
2	In what way they may associate with the sub-project	They will give all types of cooperation for implementation of the sub-project	More consultation before start of the sub-project.
3	Presence of any forest, wildlife or any sensitive/ unique environmental components nearby the project area	Not anticipated	No need to take action.
4	Presence of historical/cultural/ Religious sites nearby	Not anticipated	No need to take action.
5	Unfavorable climatic condition	During the rainy season, the town becomes flooded if heavy rainfall occurs within short duration.	Design the drain adequately.
6	Occurrence of flood	The city often inundated due to heavy rainfall for short duration. No major flood occurred recently.	Design the drain adequately.
7	Drainage and sewerage problem facing	The town has proper master drains covering most portion of the city to carry waste water. Therefore, no major problem with water logging in normal condition.	Design the drain adequately.
8	Availability of labour during construction time	Yes, Local labour is available.	No need to take action.
9	Dust and noise pollution disturbances during construction work	Yes, they know the impact will be short-term & negligible.	EMP will be prepared to minimize the impact.
10	Setting up construction camp site within the villages/project locality	Yes, no construction camp is required for this sub-project.	No camp or storage site within locality
11	Safety of residents during construction phase and plying of vehicle for construction activities	Yes, they are aware of the safety issues	Awareness programs will be taken before start of the construction work.

6.2 Summary of Consultation

76. If any important roads and drains of any area in development everything of that area will develop very soon. It's helpful to all classes of people who live at that area. All the local community people of that area will able to go their business, school, college and hospital within shortest time. It is helpful for extension of business which may help to earn so many foreign currencies. By earning lot of foreign currency our economic problem eradicates very soon. Pregnant woman and any ill person can go to any hospital within a small time. The employers of any government or non-government institution and the workers of that institution can go their work place very soon. The farmers can go to nearest town with their agricultural production within very short time and sale that product at high price. Police administration can take immediate action against any offender, such as Murderer, Eve-teaser, etc Appendix-6.

6.3 Consultation During Construction Phase

77. Public meetings with affected communities to discuss and plan work programs and allow issues to be raised and addressed once construction has started. Smaller-scale meetings to discuss and plan construction work with individual communities to reduce disturbance and other impacts and provide a mechanism through which stakeholders can participate in sub-project monitoring and evaluation.

6.4 Sub-project Disclosure

78. For the benefit of the community, the summary of the IEE will be discussed with the local people prior to the construction and consultations during construction period for their

information of the sub-project activities. It will be ensured that the hard copies of IEE are kept at places which are conveniently accessible to people, as a means to disclose the document and at the same time creating wider public awareness. An electronic version of the IEE will be placed in the official website of executing and implementing agencies and the ADB website after approval of the IEE by ADB. In addition to the above the below actions also could be taken as disclosure of the information.

- Public information campaigns (via newspaper, flyers, banners, and poster) to explain the sub-project to the wider city population and prepare them for disruption they may experience once the construction programme is underway;
- Public disclosure meetings at key sub-project stages to inform the public of progress, future plans and to provide copies of summary documents in local language;
- Formal disclosure of completed sub-project reports by making copies available at convenient locations in the study areas and informing the public of their availability, and
- Providing a mechanism through which comments can be made.

79. A project-specific grievance redress mechanism (GRM) will be established to receive, evaluate, and facilitate the resolution of AP's concerns, complaints, and grievances about the social and environmental performance at the level of the project. The GRM will aim to provide a time-bound and transparent mechanism to voice and resolve social and environmental concerns linked to the project.

7. GRIEVANCE REDRESS MECHANISAM (GRM)

7.1 Common GRM

80. A common GRM will be in place for social, environmental, or any other grievances related to the project; the resettlement plans (RPs) and IEEs will follow the GRM described below, which is developed in consultation with key stakeholders. The GRM will provide an accessible and trusted platform for receiving and facilitating resolution of affected persons' grievances related to the project. The multi-tier GRM for the project is outlined below, each tier having time-bound schedules and with responsible persons identified to address grievances and seek appropriate persons' advice at each stage, as required.
81. Pourashava-wide public awareness campaigns will ensure that awareness on grievance redress procedures is generated through the campaign. The project implementation unit (PIU) and governance improvement and capacity development consultants (GICDC) will conduct Pourashava-wide awareness campaigns to ensure that poor and vulnerable households are made aware of grievance redress procedures and entitlements and will work with the PMU and management, design and supervision consultants (MDSC) to help ensure that their grievances are addressed.
82. Affected persons (APs) will have the flexibility of conveying grievances/suggestions by dropping grievance redress/suggestion forms in complaints/suggestion boxes that have already been installed by project Pourashavas or through telephone hotlines at accessible locations, by e-mail, by post, or by writing in a complaint register in Pourashava offices. Careful documentation of the name of the complainant, date of receipt of the complaint, address/contact details of the person, location of the problem area, and how the problem was resolved will be undertaken. The project management office (PMU) safeguard officer will have the overall responsibility for timely grievance redress on environmental and social safeguards issues and for registration of grievances, related disclosure, and communication with the aggrieved party through the PIU designated safeguard focal person.

7.2 General

83. The objective the grievance redress mechanism (GRM) is to resolve complaints as quickly as possible and at the local level through a process of conciliation; and, if that is not possible, to provide clear and transparent procedures for appeal. A well-defined grievance redress and resolution mechanism will be established to resolve grievances and complaints in a timely and satisfactory manner. All affected persons will be made fully aware of their rights, and the detailed grievance redress procedures will be publicized through an effective public information campaign

7.3 Grievance Redress Process

84. In case of grievances that are immediate & urgent in the perception of the complainant, the contractor & MDSC on-site personnel will provide most easily accessible/first level of contact for quick resolution of grievances. Contact phone numbers & names of the concerned PIU safeguard focal person & contractors; will be posted at all construction sites at visible locations.

a. 1st Level Grievance

85. The phone number of the PIU office should be made available at the construction site signboards. The contractors and PIU safeguard focal person can immediately resolve on-site in consultation with each other, and will be required to do so within 7 days of receipt of a complaint/grievance.

b. 2nd Level Grievance

86. All grievances that cannot be redressed within 7 days at field/ward level will be reviewed by the grievance redress cell (GRC) headed by Panel Mayor of the Pourashava with support from PIU designated safeguard focal person and MDSC regional environment

and resettlement specialists. GRC will attempt to resolve them within 15 days The PIU designated safeguard focal person will be responsible to see through the process of redress of each grievance.

c. 3rd Level Grievance

87. The PIU designated safeguard focal person will refer any unresolved or major issues to the PMU safeguard officer and MDSC environmental and resettlement specialists. The PMU in consultation with these officers/specialists will resolve them within 30 days.
88. Despite the project GRM, an aggrieved person shall have access to the country's legal system at any stage and accessing the country's legal system can run parallel to accessing the GRM and is not dependent on the negative outcome of the GRM.
89. In the event that the established GRM is not in a position to resolve the issue, the affected person also can use the ADB Accountability Mechanism (AM) through directly contacting (in writing) the Complaint Receiving Officer (CRO) at ADB headquarters or the ADB Bangladesh Resident Mission (BRM). The complaint can be submitted in any of the official languages of ADB's DMCs. The ADB Accountability Mechanism information will be included in the PID to be distributed to the affected communities, as part of the project GRM.

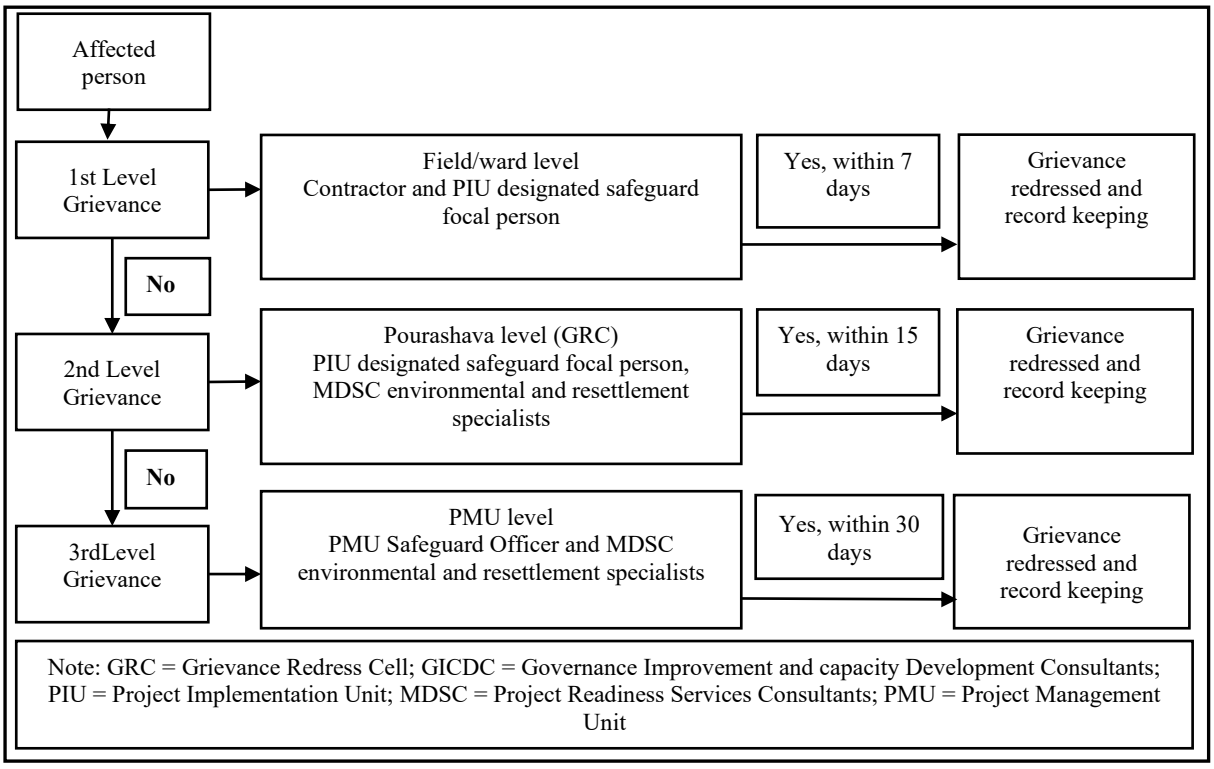


Figure 6: Project Grievance Redress Mechanism

7.4 Recordkeeping

90. Records of all grievances received, including contact details of complainant, date the complaint was received, nature of grievance, agreed corrective actions, and the date these were affected and outcome will be kept by PIU. The number of grievances recorded and resolved and the outcomes will be displayed/disclosed in the PMU office, Pourashava office, and on the web, as well as reported in monitoring reports submitted to ADB on a semi-annual basis.

7.5 Periodic Review

91. The PMU safeguard officer will periodically review the functioning of the GRM in each Pourashava and record information on the effectiveness of the mechanism, especially on the project's ability to prevent and address grievances.

7.6 **Costs**

92. All costs involved in resolving the complaints (meetings, consultations, communication, information dissemination) will be borne by the concerned PIU at Pourashava-level; while costs related to escalated grievances will be met by the PMU. Cost estimates for grievance redress related to both for social and environmental issues are included in resettlement cost estimates.

8. ENVIRONMENTAL MANAGEMENT PLAN (EMP)

8.1 Environmental Management Plan

93. An Environment Management Plan (EMP) shall be developed as part of an IEE. The EMP will outline specific mitigation measures, environmental monitoring requirements, and related. Institutional arrangements, including budget requirements for implementation. Where impacts and risks cannot be avoided or prevented, mitigation measures and actions will be identified so that the RBL sub-project is designed, constructed, and operated in compliance with applicable laws and regulations and meets the requirements specified in the EMP. The level of detail and complexity of the EMP and the priority of the identified measures and actions will be commensurate with the subproject's impacts and risks. Key considerations include mitigation of potential adverse impacts to the level of "no significant harm to third parties," the "polluter pays" principle, the precautionary approach, and adaptive management.
94. A copy of the EMP must be kept on work sites at all times. This EMP is included in the bid documents and will be further reviewed and updated during implementation. The EMP will be made binding on all contractors operating on the site and will be included in the contractual clauses. Non-compliance with, or any deviation from, the conditions set out in this document constitutes a failure in compliance.
95. A generic environmental management plan (EMP) is presented in Table-11, that focus on all three phases – (i) design and pre-construction phase, (ii) construction phase, and (iii) operation and maintenance phase. It ensures that the project impacts are minimized to an acceptable level at all the three phases at the RBL sub-project level. Thus, EMP becomes the document for ensuring that all the preceding analysis is used to preserve/improve overall environmental quality within the influence area of the project. The EMP describes the probable adverse impacts, selected management measures to bring it to an acceptable level and timelines for implementing these measures. It also clarifies roles and responsibilities PMU, PIU/Pourashava, contractors, etc. A RBL sub-project specific EMP will be prepared once sub-projects are identified along with designs and that has to be integrated with the bidding document.
96. The site specific EMP will be prepared for specific subprojects as and when identified based on IEE. An EMP document should include:

    i. Lists of all project related activities and impacts, for each stage of the development of projects, i.e., for the design, construction and maintenance stages;
    ii. A list of regulatory agencies involved and their responsibilities;
    iii. Specific remedial and monitoring measures proposed for each stage;
    iv. A clear reporting schedule, including discussion of what to submit, to whom, and when;

97. EMP shall deal with the construction and operations stage of the sub-projects. The extent and timing of mitigation actions should be based on the significance of the predicted impacts. Some mitigation measures can be incorporated into the design of the project and can largely resolve the potential impacts of a project, e.g., drainage, access roads. Other measures require an on-going implementation plan to ensure that proposed actions are carried out at the correct times and reduce or avoid environmental impacts.
98. A budget for the EMP should also be provided. All IEEs shall be conducted and EMPs prepared prior to the bid invitation / award of construction contracts. The bid documents will include the requirement to incorporate necessary resources to implement the EMP. The EMP will form part of the contract document, and, if required, will need to be further updated during the construction phase of a RBL sub-project.

Table 11: Environmental Management Plan – Mitigative Measures

Ref. No.	Issues & Impacts	Mitigation Measures	Responsible for	
			Implementation	Supervision
1.0 Pre-construction Phase				
1.1	**Obtaining of SCC/NOCs** Failure to obtain necessary consents, permits, SCC/NOCs as prescribed in environmental legislation framework (Chapter II) can result in design revisions and/or stoppage of the Works.	▪ The proposed road and drain will be constructed in Pourashava own land and existing road and drain networks, that's why all necessary consents, permits, clearance, etc. not required to be obtain before start of civil works (ensured from DDR report). ▪ DoE will issue the ECC upon approval of the IEE/EIA study (including associated EMP). The ECC allows project construction to commence, and contains specific approvals requirements for matters such as pollution control and environmental monitoring. ▪ **Note;** The DoE has issued a letter for Improving Urban Governance and Infrastructure Program (IUGIP).	PIU/Contactor	PMU/MDSC
1.2	**Updating of EMP based on necessary** Specific impacts will be identified as per design updating and construction works	▪ Update IEE and EMP as per necessary of detail design and construction works ▪ Ensure updated EMP is provided to contractors	PMU/ MDSC	MDSC
1.3	**Existing Utilities** Disruption of services (short term).	▪ Drawing from the consultant's visit, there was no utility or services found. Therefore, disruption in services is not expected. ▪ There is no vegetation alongside the existing Right Off Ways and proposed site. In addition, there is no water body nearby. No impact is expected on flora and fauna. ▪ Require construction contractors to prepare a contingency plan to include actions to be done in case of unintentional interruption of services. ▪ Existing infrastructure (such as trees and electric pole etc.) shall be relocated before construction starts at the sub-project sites. ▪ Prior permission shall be obtained from respective local authority for use of water for construction. Use of water for construction works shall not disturb local water users. ▪ If construction work is expected to disrupt users of community water bodies, notice to the affected community shall be served 7 days in advance and again 1 day prior to start of construction.	Contractor	MDSC/PIU
1.3 (a)	**Preparation & mobilization of field office**	▪ A detailed plan and drawing of the semi-pucca site office (Area: 50 sq. m) with the arrangement of sufficient natural light, fan, toilet, safe drinking water, hit protecting ceiling, damp proofing equipment, and so on will be developed & submitted to the Pourashava before beginning the construction work.	Contractor	MDSC/PIU
1.4	**Construction Camps Location, & Stock Yards** Temporary disruption to traffic flow and sensitive receptors; Water body may be disturbed	▪ Camp for the workers will provide properly. Adequate disposal of sanitary waste will be considered in order to follow best waste management practices. Basic hygiene and cleanliness in the worker cam. In particular, usable toilet facilities separate Male & Female, Kitchen waste collection & dumping will be exist & well-maintained with basic provision of soak pits & septic tanks. Safe drinking water will be provided to the workers. Fire extinguisher would be provided, First Aid Box with Doctor's Name, Mobile number & necessary emergency Ambulance number.	Contactor	MDSC/PIU

Ref. No.	Issues & Impacts	Mitigation Measures	Responsible for	
			Implementation	Supervision
		▪ Determine locations prior to award of construction contracts. ▪ Avoid nearby water body, educational institutes and agricultural land		
1.5	**Sources of Materials** Temporary extraction of materials can disrupt natural land contours Air pollution and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution.	▪ Prepare list of approved quarry sites and sources of materials ▪ Select authorized supplier ▪ Well-defined area for storage with suitable containment, proper labelling of different items, and determines locations prior to award of contract will be ensured.	Contactor	MDSC/PIU
1.6	**EMP Implementation Training** Potential insignificant impact mitigation training to the environment, contactor representative/workers, Pourashava officials	▪ Training will be required to undergo EMP implementation including waste management, Standard operating procedures (SOP) for construction works; health and safety (H&S), core labor laws, applicable environmental laws, etc	Contractor	PMU/PIU
2.0 Construction Phase				
2.1	**Topography, Landforms, Geology** In-significant amount of gravel, sand, bitumen and cement will be required for this sub-project. Extraction of construction materials may cause localized changes in topography and landforms. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	▪ Utilize readily available sources of materials. If contractor procures materials from existing burrow pits and quarries, ensure these conform to all relevant regulatory requirements. ▪ Borrow areas and quarries (If these are being opened up exclusively for the sub-project) must comply with environmental requirements, as applicable. No activity will be allowed until formal agreement is signed between PIU, landowner and contractor. ▪ Save topsoil removed at the start of the project and use it to reclaim disturbed areas upon completion of construction activities. ▪ Apply protective covering on disturbed soils as quickly as possible. ▪ Clean and maintain catch basins and drainage ditches regularly. ▪ Re-establish the original grade and drainage pattern to the extent practicable. ▪ Obtain borrow material from authorized and permitted sites.	Contractor	MDSC/PIU
2.2	**Soil Quality** ▪ Leakages of oil and chemical materials from construction activity ▪ Inappropriate disposal of waste ▪ Exhaust gas and dust from vehicles	▪ Storage of oil and chemical materials in an appropriate storage site and method to prevent permeation into the ground. ▪ Prohibit illegal dumping ▪ Soil quality monitoring	Contractor	MDSC/PIU
2.3	**Surface/Waste Water Quality**	▪ Prepare and implement a waste management plan (see Appendix 2 for outline).	Contractor	MDSC/PIU

Ref. No.	Issues & Impacts	Mitigation Measures	Responsible for	
			Implementation	Supervision
	Trenching and excavation, run-off from stockpiled materials, and contamination from fuels and lubricants may result to silt-laden runoff during rainfall which may cause reduction in the quality of adjacent bodies of water/Surface water pollution is expected but minor negative and short term, site-specific within a relatively small area and reversible by mitigation measures.	▪ Prioritize re-use of excess waste and materials in construction activities. If waste will be disposed, consult with Pourashava local authority on designated disposal areas. ▪ All earthworks must be conducted during dry season to the maximum extent possible to avoid the difficult working conditions that prevail during monsoon season such as problems from runoff. ▪ Water quality will be tested pre-during-post construction by contactor. ▪ Location for stockyards for construction materials shall be identified far away from watercourses. ▪ Place storage areas for fuels and lubricants away from any drainage leading to water bodies. ▪ Take precautions to minimize the wastage of water in the construction activities. ▪ Take all precautions to prevent entering of wastewater into nearby watercourses. Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies. ▪ Ensure diverting storm water flow during construction shall not lead to inundation and other nuisances in low lying areas. ▪ Ensure no construction materials like earth, stone, or appendage are disposed of in a manner that may block the flow of water		
2.4	**Groundwater Quality** The potential exists for drinking water sources to be contaminated by the seepage of wastes from workers camps through the soil profile into the GW aquifer minimal (particularly if wells access the shallow aquifer).	▪ Workforce camps will be located away from water resources. All practical measures such as provision of septic tanks, color bin, garbage bags, and other sanitation facilities will be implemented at the construction camps to prevent the wastewater and solid wastes from entering well and groundwater recharge areas. ▪ Wells used for drinking will be tested quarterly to ensure portability.	Contractor	MDSC/PIU
2.5	**Air quality** Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants (such as carbon monoxide, sulphur oxides, particulate matter, nitrous oxides, and hydrocarbons) which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	▪ Water spraying to control dust as per necessary; ▪ Use tarpaulins to cover soils, sand and other loose material when transported by trucks. ▪ Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free. ▪ Arrangements to control dust through provision of windscreens, water sprinklers. ▪ Air Damp down exposed soil and any sand stockpiled on site by spraying with water when necessary, during dry weather will be accelerated; ▪ Use barriers to cover BC road, CC road implementation and demolition infrastructure will be ensured. ▪ And hot-mix plants, batching plants and crushers 350.00m will be situated far from residence. quality will be tested pre-during-post construction by contactor	Contractor	MDSC/PIU

Ref. No.	Issues & Impacts	Mitigation Measures	Responsible for	
			Implementation	Supervision
2.6	**Noise & Vibration** Temporary increase in noise level and vibrations may be caused by excavation equipment, transportation of equipment, construction materials and construction activity. However, the proposed sub-project will be existing location and impact is short-term, site-specific and within a relatively small area. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	▪ Plan activities in consultation with Bagha local authority so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance. ▪ Use of high noise generating equipment shall be avoided. ▪ Utilize modern vehicles and machinery with the requisite adaptations to limit noise and exhaust emissions, ▪ All vehicles and equipment used in construction shall be fitted with exhaust silencers. Use silent-type generators (if required). ▪ Monitor noise levels. Maintain maximum sound levels not exceeding 85 decibels (dBA) when measured at a distance of 10 m or more from the vehicle/s. ▪ If it is not practicable to reduce noise levels to or below noise exposure limits, the contractor must post warning signs in the noise hazard areas. Workers in a posted noise hazard area must wear hearing protection. ▪ Noise level will be tested pre-during-post construction by contactor ▪ Use of ear plugs / muffs by all construction workers during operation of heavy equipment/ machinery will be ensured. ▪ Wherever feasible, noise absorption padding / enclosures will be used surrounding the noise-generating machinery.	Contractor	MDSC/PIU
2.7	**Waste Pollution** ▪ Construction waste from construction work ▪ Domestic waste from workers ▪ Hazardous waste	▪ Follow the 'Waste Management Plan' in Appendix 2. ▪ Conduct separate waste collection and promote recycling and reuse. ▪ Appropriate disposal of non-recyclable waste according to rules ▪ Hazardous waste should be treated under the related regulation	Contractor	MDSC/PIU
2.8	**Aesthetics** The construction activities do some anticipate any cutting of trees but will produce excess excavated earth (spoils), excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers, spoils, oils, lubricants, and other similar items. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	▪ Remove all construction and demolition wastes on a daily basis. ▪ Coordinate with Bagha local authority for beneficial uses of excess excavated soils or immediately dispose to designated areas Avoid stockpiling of any excess spoils ▪ Suitably dispose of collected materials from construction site, unutilized materials and debris either through filling up of pits/wasteland or at pre-designated disposal locations. ▪ Clean the construction side road/drain regularly. ▪ All vehicles delivering fine materials to the site and carrying waste debris for disposal shall be covered to avoid spillage of materials. All existing roads used by vehicles of the contractor, shall be kept clear of all dust/mud or other extraneous materials dropped by such vehicles. ▪ Lighting on construction sites at night. ▪ The site must be kept clean to minimize the visual impact of the site.	Contractor	MDSC/PIU
2.9	**Biodiversity**	▪ If during construction period cutting of trees will be required, compensatory plantation for trees lost at a rate of 2 trees for every tree cut.	Contractor	MDSC/PIU

Ref. No.	Issues & Impacts	Mitigation Measures	Responsible for	
			Implementation	Supervision
	Activities being located in the built-up area of Pourashava. There are no protected areas in or around existing sub-project sites, and no known areas of ecological interest. There are bonoge trees at the site that need to be removed.	▪ 100 nos trees planted will be open space locations. ▪ All efforts shall be made to preserve trees by evaluation of minor design adjustments/ alternatives (as applicable) to save trees. ▪ Special attention shall be given for protecting giant trees and locally-important trees (with religious importance) during implementation. ▪ Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna (animal) including fishing in any water body in the subproject vicinity. ▪ Prohibit employees from poaching wildlife and cutting of trees for firewood		
2.10	**Traffic Congestion** Hauling of construction materials and operation of equipment on-site can cause traffic problems. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	▪ Maintain safe passage for vehicles and pedestrians throughout the construction period. ▪ Schedule truck deliveries of construction materials during periods of low traffic volume. ▪ Erect and maintain barricades, including signs, markings, flags and flagmen informing diversions and alternative routes when required. ▪ Notify affected sensitive receptors by providing sign boards informing nature and duration of construction activities and contact numbers for concerns/complaints. ▪ Provide walkways and metal sheets where required to maintain access across for people and vehicles. ▪ Consult businesses and institutions regarding operating hours and factoring this in work schedules. Ensure there is provision of alternate access to businesses and institutions during construction activities, ▪ Ensure any damage to properties and utilities will be restored or compensated to pre-work conditions. ▪ Protection of traffic at all times along the existing sub-project, necessary barricades, warning lights & guide signs etc. will be ensured.	Contractor	MDSC/PIU
2.11	**Socio-economic status** Sub-project components will be located in Pourashava land and there is no requirement for land acquisition or any resettlements. Manpower will be required during the construction stage.	▪ Employ at least 50% of labor force from communities in the vicinity of the site. This will have the added benefit of avoiding social problems that sometimes occur when workers are imported into host communities, and avoiding environmental and social problems from workers housed in poorly serviced camp accommodation. ▪ To ensure engage women employee as per gender action plan ▪ To ensure first priority engage disable labour as per gender action plan	Contractor	MDSC/PIU
2.12	**Community Health and Safety** Short-term construction works will impede the access of residents and businesses in limited cases. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures. Poor safety signage and lack of barriers at work site and	▪ Provide safety signage at construction sites visible to public ▪ Provide safety barriers near any trenches, and cover trenches with planks during non-work hours. ▪ Consult with Pourashava local authority on the designated areas for stockpiling of, soils, gravel, and other construction materials. ▪ If the contractor chooses to locate the work camp/storage area on private land, he must get prior permission from the environment specialist and Pourashava. ▪ Recycling and the provision of separate waste receptacles for different types of waste shall be encouraged.	Contractor	MDSC/PIU

Ref. No.	Issues & Impacts	Mitigation Measures	Responsible for	
			Implementation	Supervision
	trenches will create hazard to pedestrians and children.	▪ Interested and affected parties need to be made aware of the existence of the complaints book and the methods of communication available to them. The contractor must address queries and complaints by: (i) documenting details of such communications; (ii) submitting these for inclusion in complaints register; (iii) bringing issues to the environmental specialist's attention immediately; and (iv) taking remedial action as per environment specialist's instruction. ▪ The contractor shall immediately take the necessary remedial action on any complaint/grievance received by him and forward the details of the grievance along with the action taken to the environmental specialist within 48 hours of receipt of such complaint/grievance. ▪ Safety signage at all sites visible to public will be provided. ▪ Safety barriers near any trenches, and cover trenches with planks during non-work hours will be provided. ▪ If construction work is expected to disrupt users of community water bodies, notice to the affected community shall be served 7 days in advance and again 1 day prior to start of construction. ▪ Properties and utilities will be restored or compensated to pre-work conditions if any damage occurred. ▪ Extensive barricades of the construction zone will be provided so that pedestrians do not come into direct contact with the machines, tools, material and other accessories; ▪ Provision of barricading will be done so that these do not create traffic safety problems. Supplementary aids / tools such as signboards, reflectors and night lighting will be used to avoid possible accidents.		
2.13	**Workers Health and Safety** There is invariably a safety risk when construction works such as excavation, sand filling, carrying of mixture materials, Shuttering, steel/wood work and earthmoving are conducted in urban areas. Workers need to be mindful of the occupational hazards which can arise from working in height and excavation works. Potential impacts are negative and major but reversible by mitigation measures.	▪ Comply with requirements of Government of Bangladesh Labor Law of 2006 & 2015 and all applicable laws and standards on workers H&S. ▪ Ensure that all site personnel have a basic level of environmental awareness training. If necessary, the environmental management specialist and/or a translator shall be called to the sites to further explain aspects of environmental or social behaviour that are unclear. ▪ Produce and implement a site health and safety (H&S) plan which include measures as: (i) excluding the public from worksites; (ii) ensuring all workers are provided with and required to use personal protective equipment (reflectorized vests, footwear, gloves, goggles and masks) at working times; (iii) providing (H&S) training for construction site personnel; (iv) documenting procedures to be followed for all site activities; and (v) maintaining accident reports and records. ▪ Arrange for readily available first aid unit including an adequate supply of sterilized dressing materials. ▪ Maintain necessary living accommodation and ancillary facilities in functional and hygienic manner in work camps. Ensure (i) uncontaminated water for drinking, cooking and washing, (ii) clean eating areas where workers are not exposed to hazardous or noxious substances; (iii) providing fire extinguisher at construction site and (iv) sanitation facilities are available at all times. ▪ Provide medical insurance coverage for workers; ▪ Provide H&S orientation training to all workers to ensure that they are apprised of the basic site rules of work at the site, PPE, and preventing injuring to fellow workers;	Contractor	MDSC/PIU

Ref. No.	Issues & Impacts	Mitigation Measures	Responsible for	
			Implementation	Supervision
		▪ Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; ▪ Disallow worker exposure to noise level greater than 85 dBA for duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively. ▪ Provision of personal protection equipment (PPE) such as helmets, safety shoes & glass, gloves, and face masks, safety sign for the workers; provision of first aid box with basic apparatus will be available. (Bangladesh Labour Law of 2006, Bangladesh labor service rules 2015 and all applicable laws and standards on workers H & S.), ▪ Tube well is the source of drinking water in this area. Thus, Tube well water will be provided to labors for drinking & other purposes. Water quality is good in this area, water quality will be monitor when necessary.		
2.14	COVID- 19 Health & Safety impact short-term for construction camp and implementation side	▪ Adequate safety measures e.g., mask, googols, face shield, hand gloves, hand sanitizer etc. to be used. ▪ Social distance (>3ft) is ensured for the worker safety. ▪ Adjustments to work practices, to reduce the number of workers and increase social distancing. ▪ Train workers on hygiene and other preventative measures and implement a communication strategy for regular updates on COVID-19 related issues and the status of affected workers. ▪ Treatment of workers who are or should be self-isolating and/or are displaying symptoms. ▪ Hand wash continues for 20 seconds before starting the work schedule.	Contractor	MDSC/PIU
2.15	**Post-construction Clean-up** Damage due to debris, spoils, excess construction materials	▪ Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; and. ▪ All disrupted utilities restored ▪ All affected structures rehabilitated/ compensated ▪ The construction camp is to be checked for spills of substances such as used container/water bottles, paint, etc. and these shall be cleaned up. ▪ All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be top soiled and regressed using the guidelines set out in the re-vegetation specification that forms part of this document. ▪ The contractor must arrange the cancellation of all temporary services. ▪ Request PMU/PIU to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work. ▪ During excavating / cleaning work of the safety measures will be taken by the construction crew wearing protective clothing, shoes, gloves and face masks. Collected earth and sand will be covered during transportation. ▪ Compensatory tree plantation in the ratio of 2 trees planted for each tree that had to be cut due to construction ▪ Any tree saved from cutting will be barricaded and protected.	Contractor	MDSC/PIU
	Debris management	▪ Well-defined onsite area for storing of any debris generated; transporting debris with proper coverage; Disposal in an approved dump yard / landfill will be ensured.	Contractor	MDSC/PIU

Ref. No.	Issues & Impacts	Mitigation Measures	Responsible for	
			Implementation	Supervision
		▪ Transporting with adequate safety precautions, (e.g., not to use undersized trucks) as well as adequate covering of trucks that are used to transport material to and from the construction site will be maintained properly. ▪ Preparation of spoils management plan and traffic management plan will strongly be maintained.		
	Public awareness campaign	▪ Public awareness events will be held before and during construction work. This awareness campaign may be done through miking, deployment of the watchmen, sticking/hanging posters, banners and sign board (size: 1.2mx0.9m Plane CI Sheet) near the construction site.	Contractor	MDSC/PMU
2.16	**Submission of EMP Implementation Report** Unsatisfactory compliance to EMP	▪ Appointment of supervisor/Manager to ensure EMP implementation ▪ Timely submission of Progress report/environmental monitoring reports including pictures	Contractor	MDSC/PIU
3.0 Operation Phase				
3.1	**Air Quality** ▪ Exhaust gas from vehicles used for mobilization of equipment and workers ▪ Dust from roads and drains	▪ Provisions of Pourashava budget for operation & maintenance of the road; ▪ Awareness raising camps and demonstration including the transport owners and drivers; ▪ Watering the roads during dry season; ▪ Periodic monitoring;	Pourashava	Pourashava
3.2	**Noise Level** ▪ Noise caused by vehicles moving along the road carrying passengers and goods.	▪ Provisions of Pourashava budget for operation & maintenance; ▪ Awareness raising camps and demonstration including the transport owners and drivers; ▪ Prohibit the use of hydraulic horns; ▪ Use of signs at sensitive locations; ▪ Periodic monitoring;	Pourashava	Pourashava
3.3	**Surface/Waste Water Quality** ▪ Surface water runoff to nearby lands ▪ Ponds along the road ▪ Waste water to the khal	▪ Provisions of Pourashava budget for operation & maintenance of drains; ▪ Water quality test from the drain outfall once in a year take mitigation measures accordingly. ▪ If the water quality of the river will be deteriorated then check the drains within the sub-project at first and others drain accordingly. ▪ Awareness raising camps and demonstration including the house owners; ▪ Cleaning the drains regularly; ▪ Prohibit the illegal connections to the drains; ▪ Periodic monitoring;	Pourashava	Pourashava
3.4	**Waste Management** Clogging of drains.	▪ Provisions of Pourashava budget for operation & maintenance of drains; ▪ Awareness raising camps and demonstration including the house owners; ▪ Do not throw plastic materials in to the drains; ▪ Remove the waste materials from drain side within the shortest time; ▪ Periodic monitoring;	Pourashava	Pourashava

Ref. No.	Issues & Impacts	Mitigation Measures	Responsible for	
			Implementation	Supervision
3.5	**Road Accident** Increase of road accident due to additional traffics	▪ Provide road safety signs and speed bumps/speed breaker at the densely populated/accident prone area such as school, college, commercial area etc. ▪ Provide training to community people to aware about road safety	Pourashava	Pourashava

8.2 Environmental Monitoring Plan

99. The monitoring plan is one of the important tools of implementing the mitigation plan for the proposed road and drain sub-project. The Monitoring plan provides guidance regarding environmental issues/parameters, location, frequency and means of monitoring.
100. The aim of environmental monitoring during the pre-construction, construction and operation phases of the sub-project road/drain is to compare the monitored data against the baseline condition collected during the study period (particularly during the detailed design stage) to assess the effectiveness of the mitigation measures and the protection of environmental components (e.g., air, water, soil, noise etc.) based on the national environmental standards (e.g., ECR 2023). Since the project is likely to have impact on various components of the environment, a comprehensive monitoring plan covering soil erosion, drainage congestion, tree plantation, air quality, water quality, noise, wildlife movement, workers' and community health and safety and so on need to be developed.
101. An Environmental Monitoring Plan (EMoP) has been prepared table 12 along with this IEE for the execution as a means to mitigate or minimize the adverse impacts associated with construction and operational activities of the project on the natural and social environments.
102. The objective of environmental monitoring during the construction and operation phases is to compare the monitored data against the baseline condition collected during the study period to assess the effectiveness of the mitigation measures and the protection of the ambient environment based on national standards. The main objectives of the pre-construction, construction and operation phase monitoring plans will be to:

    i. Monitor the actual impact of the works on physical, biological and socioeconomic receptors within the project corridor for indicating the adequacy of the IEE;
    ii. Recommend mitigation measures for any unexpected impact or where the impact level exceeds that anticipated in the IEE;
    iii. Ensure compliance with legal and community obligations including safety on construction sites;
    iv. Monitor the rehabilitation of borrow areas and the restoration of construction campsites as described in the EMP;
    v. Ensure the safe disposal of excess construction materials.
    vi. Appraise the adequacy of the IEE with respect to the project's predicted long-term impacts on the corridor's physical, biological and socio-economic environment;
    vii. Evaluate the effectiveness of the mitigation measures proposed in the EMP and recommend improvements, if and when necessary;
    viii. Compile periodic accident data to support analyses that will help minimize future risks; and
    ix. Monitor the survival rate of avenue plantations.

Table 12: Environmental Management Plan - Monitoring Actions

Table 13

Ref. No.	Environmental Issues	Significant Impact	Purpose of the Monitoring	Monitoring Method			Responsibility	
				Method of Collecting and Reporting Data	Location	Duration and Frequency	Implementation	Supervision
1.0 Pre-construction Phase								
1.1	**Obtaining of SCC/NOCs**	Failure to obtain necessary consents, permits, NOC's can result in design revisions and/or stoppage of the works.	Compliance to GOB and ADB policies	Obtaining certificates	Pourashava	Prior to contractor mobilization	PMU/PIU	PMU/MDSC
1.2	**Updating of EMP**	Specific impacts will be identified as per design updating and construction works	Ensuring the compliance with construction schedule	Preparation of report	PMU	During the pre-construction period	MDSC	PMU
1.3	**Existing Utilities**	Disruption of services (short term).	Implementation of EMP	Obtain record of implantation	In the work site	Prior to contractor mobilization	Contractor	PIU/MDSC
1.4	**Construction Camps, & Stock Yards**	Disruption to traffic flow and sensitive receptors Water body and agricultural land may be disturbed	Implementation of EMP	Obtaining approval from MDSC/PIU	In the work site	Prior to contractor mobilization	Contractor	PIU/MDSC
1.5	**Sources of Materials**	Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution.	Compliance with GOB laws and Implementation of EMP	Obtaining approval from MDSC/PIU	Pourashava	During the pre-construction period	Contractor	PIU/MDSC
1.6	**EMP Implementation Training**	Irreversible impact to the environment, contactor representative/workers, Pourashava officials	Implementation of EMP	Obtain record of training	PMU/PIU	Prior to contractor mobilization	MDSC	PMU
2.0 Construction Phase								

Ref. No.	Environmental Issues	Significant Impact	Purpose of the Monitoring	Monitoring Method			Responsibility	
				Method of Collecting and Reporting Data	Location	Duration and Frequency	Implementation	Supervision
2.1	**Topography, Landforms, Geology**	Significant amount of gravel, sand, rod, and cement will be required for this sub-project. Extraction of construction materials may cause localized changes in topography and landforms. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	▪ Restoration of changes due to construction activities ▪ Visual amenity	▪ Visual inspection & consultation with local people	▪ In the work site	During construction period	Contractor	MDSC/PIU
2.2	**Soil Quality**	Significant amount of soil will be required for this sub-project. Extraction of construction materials may cause localized changes in topography and landforms. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	▪ Restoration of changes due to construction activities ▪ Visual amenity	▪ Soil quality test report ▪ Parameters for testing are Organic Matter, Zn, Sulphur, Lead and Nitrate	▪ In the work site or ▪ Labour Camp or R-009, DS-04	▪ Three times pre-construction, during construction and after completion	Contractor	MDSC/PIU
2.3	**Surface/Waste water Quality**	Trenching and excavation, run-off from stockpiled materials, and contamination from fuels and lubricants may result to silt-laden runoff during rainfall which may cause reduction in the quality of adjacent bodies of water. Surface water pollution is expected but minor negative and short term, site-specific within a relatively small area and reversible by mitigation measures**.**	Evaluation of effect of the mitigation measure towards water pollution	▪ Visual inspection & consultation with local people ▪ Water quality test report ▪ Surface/Waste water parameters: DO, Phosphate, Sulphate, EC, TDS, TSS, COD, and BOD	▪ In the work site or ▪ DS-03, DS-04, DS-16	▪ Three times pre-construction, during construction and after completion	Contractor	MDSC/PIU

Ref. No.	Environmental Issues	Significant Impact	Purpose of the Monitoring	Monitoring Method			Responsibility	
				Method of Collecting and Reporting Data	Location	Duration and Frequency	Implementation	Supervision
2.4	**Ground water Quality**	The potential exists for drinking water sources to be contaminated by the seepage of wastes from workers camps through the soil profile into the GW aquifer (particularly if wells access the shallow aquifer).	Evaluation of effect of the mitigation measure towards water pollution	▪ Record of water borne diseases ▪ Water quality test report ▪ Groundwater parameters: pH, Fe, EC, As, TC, FC, Cl and Manganese	▪ In the work site or ▪ Labour Camp or R-009, DS-04	Three times pre-construction, during construction and after completion	Contractor	MDSC/PIU
2.5	**Air quality**	Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants (such as carbon monoxide, sulphur oxides, particulate matter, nitrous oxides, and hydrocarbons) which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	Evaluation of effect of the mitigation measure towards air pollution	▪ Visual inspection & consultation with local people ▪ Air quality test report ▪ Parameters are PM_{10}, $PM_{2.5}$, SOx, NOx, CO and O3	▪ In the work site ▪ R-009	Three times pre-construction, during construction and after completion	Contractor	MDSC/PIU
2.6	**Noise & Vibration**	Temporary increase in noise level and vibrations may be caused by excavation equipment, transportation of equipment, construction materials and construction activity. However, the proposed sub-project will be existing location and impact is short-term, site-specific and within a relatively small area. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	Evaluation of effect of the mitigation measure towards noise pollution	▪ Visual inspection & consultation with local people ▪ Noise level test report ▪ LAeq (Day & Night)	▪ In the work site ▪ R-009, DS-03, DS-04, DS-16	Three times pre-construction, during construction and after completion	Contractor	MDSC/PIU

Ref. No.	Environmental Issues	Significant Impact	Purpose of the Monitoring	Monitoring Method			Responsibility	
				Method of Collecting and Reporting Data	Location	Duration and Frequency	Implementation	Supervision
2.7	**Waste Pollution**	▪ Construction waste from construction work ▪ Domestic waste from workers ▪ Hazardous waste	Evaluation of effect of the mitigation measure for waste	Record of kinds and quantity of waste, and the disposal method	▪ Along the road site	During construction period	Contractor	MDSC/PIU
2.8	**Aesthetics**	The construction activities do not anticipate any cutting of trees but will produce excess excavated earth (spoils), excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers, spoils, oils, lubricants, and other similar items. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	Evaluation of effect of the mitigation measure	Visual inspection & consultation with local people	▪ In the work site	During construction period	Contractor	MDSC/PIU
2.9	**Biodiversity**	▪ Activities being located in the built-up area of Pourashava. There are no protected areas in or around existing sub-project sites, and no known areas of ecological interest. There are no trees at the site that need to be removed.	▪ Confirm that this planting plan is following during the construction period. ▪ Also confirm that grass turfing and drainage system instalment is preventing surface runoff and erosion.	▪ Visual inspection ▪ Record of plant survival percentage	▪ In the work site and nearby homestead vegetation	▪ During construction period ▪ Bidding BoQ budget included	Contractor	MDSC/PIU
2.10	**Traffic Congestion**	Hauling of construction materials and operation of equipment on-site can cause traffic problems. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	Evaluation of effect of construction schedule	▪ Visual inspection & consultation with local people ▪ Record of accidents ▪ Record of numbers construction vehicles	In the work site	During construction period	Contractor	MDSC/PIU

Ref. No.	Environmental Issues	Significant Impact	Purpose of the Monitoring	Monitoring Method			Responsibility	
				Method of Collecting and Reporting Data	Location	Duration and Frequency	Implementation	Supervision
2.11	**Socio-economic status**	Sub-project components will be located in Pourashava land and there is no requirement for land acquisition or any resettlements. Manpower will be required during the construction stage. This can result to generation of contractual employment and increase in local revenue. Thus, potential impact is positive and long-term.	Evaluation of effect of construction schedule	Consultation with local people	In the project area	During construction period	Contractor	MDSC/PIU
2.12	**Community health and safety**	Construction works will impede the access of residents and businesses in limited cases. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures. Poor safety signage and lack of barriers at work site and trenches will create hazard to pedestrians and children.	Evaluation of effect of the work safety plan	▪ Visual inspection & consultation with local people ▪ Record of accidents	In the project area	During construction period	Contractor	MDSC/PIU
2.13	**Worker's health and safety**	There is invariably a safety risk when construction works such as excavation, sand filling, carrying of mixture materials, Shuttering, steel/wood work and earthmoving are conducted in urban areas. Workers need to be mindful of the occupational hazards which can arise from working in height and excavation works. Potential impacts are negative and major but reversible by mitigation measures.	Evaluation of effect of the work safety plan	▪ Visual inspection & consultation with worker ▪ Record of accidents	In the work site	During construction period	Contractor	MDSC/PIU
2.14	**Post-construction clean-up**	Damage due to debris, spoils, excess construction materials	Evaluation the implementation of EMP	▪ Visual inspection & consultation with local people ▪ Reporting	In the work site	At the end of construction period along with the EMP	Contractor	MDSC/PIU

Ref. No.	Environmental Issues	Significant Impact	Purpose of the Monitoring	Monitoring Method			Responsibility	
				Method of Collecting and Reporting Data	Location	Duration and Frequency	Implementation	Supervision
						implementation report		
2.15	**Submission of EMP implementation report**	Unsatisfactory compliance to EMP	Evaluation the implementation of EMP	Record of report submission	MDSC/PMU	At the end of construction period	Contractor	MDSC/PIU
3.0 Operation Phase								
3.1	**Air Quality**	Movement of vehicle will create air quality	Visual inspection, and consultation with local people	▪ O&M budget for periodic monitoring	Pourashava area	During operation period	Pourashava	Pourashava
3.2	**Noise Level**	Movement of vehicle will create noise level	Monitoring, and consultation with local people	▪ O&M budget for periodic monitoring	Pourashava area	During operation period	Pourashava	Pourashava
3.3	**Surface/Waste Water Quality**	The surface water might be contaminated due to waste water carrying by the drains	▪ Visual inspection and consultation with worker ▪ Waste water quality test	▪ O&M budget for periodic monitoring	Pourashava area	During operation period	Pourashava	Pourashava
3.4	**Health & Safety**	Worker involved in cleaning and maintaining the drains and roads may get sick if not trained and provided the PPE adequately	Visual inspection and consultation with worker	▪ O&M budget for periodic monitoring	Pourashava area	During operation period	Pourashava	Pourashava
3.5	**Waste Management**	Worker involved in waste management and maintaining the sub-project may get sick if not trained/awareness adequately	Visual inspection and consultation with worker	▪ O&M budget for periodic monitoring	Pourashava area	During operation period	Pourashava	Pourashava
3.6	**Road Accident**	Increase of road accident due to additional traffics	Visual inspection, record of accidents and	▪ O&M budget for periodic monitoring	Pourashava area	During operation period	Pourashava	Pourashava

Ref. No.	Environmental Issues	Significant Impact	Purpose of the Monitoring	Monitoring Method			Responsibility	
				Method of Collecting and Reporting Data	Location	Duration and Frequency	Implementation	Supervision
			consultation with local people					

8.3 Institutional Capacity Development Program

103. As a part of the capacity building during the implementation of IUGIP RBL Program, training programs will be conducted at PMU, PIUs (at Pourashava level) and sub-projects construction sites on environmental and social safeguards policies, and how to prepare safeguard planning and monitoring instruments and implement them. The subproject sites/PIU level training programs will focus on the awareness about safeguard requirements among the PIU and contractor staff who will involve in activities related to construction of drains, roads, toilet block, low-income neighbourhoods' improvement and other components. The capacity building training programs will be conducted by the PMU environmental specialist with the assistance of MDSC environmental expert and social safeguard specialist from PMU with MDSC social safeguard expert. The site level training programs will focus on EMP implementation, safety measures, monitoring, resettlement plan implementations, measures to avoid or minimize involuntary resettlement impacts, etc. At the PMU level, safeguards training program will focus on loan covenants compliances, monitoring requirements and reporting to ADB and regulatory agencies. The details training modules will be devised during safeguards document preparation.
104. During Program supervision missions, ADB will assess environmental compliance of subprojects and will recommend safeguard strengthening exercises, if required. It will also support the strengthening of the application of environmental safeguard policy principles to subprojects, safeguard compliance and monitoring of safeguard compliances.
105. PMU and MDSC will also organize training for PMU officials, PIU staffs, contractors, Pourashava officials orienting them on environmental and social safeguards principles as outlined in ADB SPS 2009, EMP and resettlement plan implementation, including GRM, and social safeguards monitoring requirements and mitigation measures. Table 13 provides the indicative training needs assessment. The cost of training will be borne under the Project's capacity building program by PMU.

Table 14: Indicative Training Program

Description	Contents	Schedule	Participants
Program 1 Orientation Workshop	**Module 1 – Orientation** ADB Safeguard Policy Statement Government of Bangladesh policy **Module 2 – Social/Environmental Assessment and Resettlement Planning/IEE Process** ADB policy and process, identification of impacts and mitigation measures, IEE, DDR and RP preparation, implementation, and monitoring requirements. Incorporation of safeguards into project design and contracts. Importance of robust GRM.	1 Day	LGED officials involved in project implementation PMU, PIUs, P*ourashava* officials
Program 2 Workshop for Contractors and Supervisory staff	IR/environmental issues during construction Implementation of IEE, DDR and RP Monitoring of IEE, DDR and RP implementation, Reporting Requirements, GRM	1 Day	PIUs, Contractors
Program 3 Experiences and Best Practices Sharing	Experiences on IEE, DDR and RP implementation, grievance redress – Issues and Challenges - Best Practices followed	1 Day (On a regular interval to be determined by PMU and MDSC)	PMU, PIUs MDSC, Contractors

Institutional Arrangement

106. The Ministry of Local Government, Rural Development and Cooperatives (MLGRDC) acting through its Local Government Engineering Department (LGED) will be the Executing Agency. The implementation of the RBL program will be through Local Government Engineering Department at the local level. The respective Pourashava, where the program will be implemented, are also active stakeholders of the program. After construction of the subproject components, these will be transferred to Pourashava.

107. At the LGED, PMU has been established and this PMU is being supported by the consultants. The PMU established at LGED is implementing IUGIP. The same PMU will implement RBL program. At the Pourashava level, district level team of LGED (PIU) will implement the program related construction works. The diagnostic assessment undertaken under PSSA revealed that at the LGED-PMU, currently, there are environmental and social safeguard specialists 88. As part of current RBL program implementation, the PSSA have completed as an action point for recruitment of one safeguard Officer at the PMU level. The safeguard Officer will report to the Project Director and together will form the safeguard cell. The PMU will coordinate with district level LGED Office that will form the PIU and will be responsible implementation. In the operation phase, Pourashava will take care of operation and maintenance of facilities constructed with the assistance of district team of LGED (PIU). At PIU level, one officer of Assistant Engineer rank will be designated as safeguard focal person, who will ensure EMP and resettlement plan implementation. Project Management, Design and Supervision Consultants (PMDSC) will be engaged to work closely with and advise the PMU and PIUs. Contractors at each subproject site will also designate one site engineer as environment, health, and safety officer.
108. The Safeguard Cell at PMU will ensure that environmental requirements and EMPs and the resettlement plans are included in subproject contract documents. It will also ensure that contractors will adhere to the mitigation measures listed in subproject EMPs and resettlement plans.
109. Management, Design and Supervision Consultant (MDSC). The MDSC will provide project management, design and supervision services to support the Project Management Unit (PMU). MDSC will provide support to the LGED, PMU for project management and administration, construction supervision and quality control, safeguard compliance, municipal services operation and maintenance, monitoring and evaluations, and other activities as appropriate. MDSC will have an environment specialist, a social safeguard specialist. The MDSC will provide following support to PMU and PIU.
110. Environmental and Social Safeguard Responsibilities to Support PMU

i. Provide technical support to PMU including review and update the ESMF and guidelines for specific types of the subprojects;
ii. Assist PMU in preparing annual work plan for IEE/RP preparation, update and finalize IEEs and resettlement plans as per final design and detail measurement census surveys in accordance with the ESMF and submit to PMU for approval and submission to ADB & AFD;
iii. Coordinate on all environmental and social (involuntary resettlement) concerns and ensure that all subprojects comply with safeguards requirements of ADB and Government of Bangladesh;
iv. Capacity building of PIU officials, *Pourashava* officials and staff, and Contractors regarding environmental and social safeguards, issues;
v. Assist PMU in all activities related to preparation, screening and finalization of subproject safeguard documents (IEE/EMP, resettlement plans and due diligence reports) including budget allocation, approval and internal monitoring, etc.;
vi. Perform any other task assigned by the PMU Project Director and support PMU environmental safeguard specialist and social safeguard specialist;
vii. Prepare the draft semiannual monitoring reports for review and submission to PMU and ADB & AFD; and
viii. Update, review and finalize the draft and new IEEs/resettlement plans prepared by the regional of the project for submission and approval to PMU and ADB & AFD.

111. Environmental and Social Safeguard Responsibilities to Support PIU

i. Assist PIUs to implement resettlement plans/IEEs;
ii. Guide PIU staff (safeguard focal person) conduct surveys, collect information, conduct site specific consultations;

iii. Guide and support PIUs to announce cut-off dates, and disclose EMPs and resettlement plans to affected persons and implement EMP/RPs;
iv. Support PIUs in EMP/resettlement plan implementation, monitoring and reporting, and grievance resolution and reporting;
v. Ensure that PIUs and contractors implement environmental and social impact avoidance and mitigation measures;
vi. Assist PIUs to ensure resettlement plans are implemented and all compensation paid prior to start of civil works;
vii. Assist in monitoring and reporting, preparation of quarterly and semi- annual reports (environmental and social);
viii. Assist in grievance resolution and reporting;
ix. Supervise contractors to ensure any land required temporarily during construction, is restored to original condition, post construction and all measures to mitigate and minimize environmental impacts as per EMP are adhered to;
x. Assist PIUs in monitoring of socioeconomic status of affected persons, post resettlement plan implementation.
xi. Assists PIUs in information dissemination campaign for affected persons at the outset of resettlement plan implementation and all the comments made by the affected persons will be documented in the subproject records and summarized in subproject monitoring reports;
xii. Prepare periodic safeguard monitoring reports (environmental and social) as per the format acceptable to ADB, formats as provided in PAM;
xiii. Extend assistance to LGED PIU in carrying out awareness campaigns focused on involving social and behavioral messages related to hygiene, sanitation, and health activities in the focus areas.

112. **Civil works contracts and contractors**. EMPs are to be included in bidding and contract documents and verified by the PIUs and PMU. The contractor will be required to designate an Environment, Health and Safety (EHS) supervisor to ensure implementation of EMP during civil works. Contractors are to carry out all environmental mitigation and monitoring measures outlined in their contracts.
113. The Contractors will ensure that bidding and contract documents include specific provisions requiring contractors to comply with: (i) all applicable labor laws and core labor standards on (a) prohibition of child labor as defined in national legislation for construction and maintenance activities; (b) equal pay for equal work of equal value regardless of gender, ethnicity, or caste; and (c) elimination of forced labor; and with (ii) the requirement to disseminate information on sexually transmitted diseases, including HIV/AIDS, to employees and local communities surrounding the project sites

8.4 Governance Improvement and Capacity Development Consultants (GICDC)

114. The PMU and PIUs will require support on a range of activities related to governance improvement and capacity development of Pourashavas. The GICDC will support PMU and PIUs in implementing urban government improvement action plan (UGIAP) by providing capacity development, community mobilization and other facilitation services. There are 4 GICDC regional officer working with the project and their posting place is in the LGED head office. There are 2 Local Capacity Development Associates (Community Mobilization and Municipal Finance) in each project Pourashava. The regional coordinators are assisting the Pourashavas and the LCDAs in the activities related to community participation and inclusive development. The community mobilizers have been posted at the Pourashava and (i) are working maintaining close liaison with the mayor, councilors, Pourashava staffs and communities, (ii) providing assistance and support to PIU regarding planning and implementation of citizen awareness and participation activities, urban planning, equity and inclusiveness of women and urban poor. The GICDC also have a training specialist who is responsible for identifying and

coordinating capacity building activities at Pourashava level Figure 7.

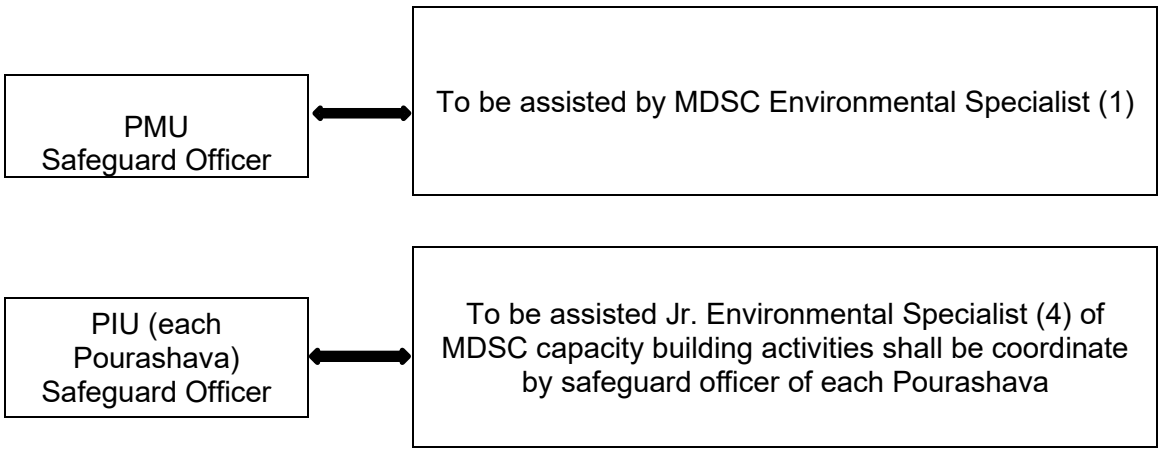


Figure 7: Safeguards Implementation Arrangement

115. Costs required for implementing the EMP will cover the following activities:

(i) Updating IEE, preparing and submitting reports and public consultation and disclosure;
(ii) Application for environmental clearances; and
(iii) Implementation of EMP, environmental monitoring program and long-term surveys.

116. The infrastructure involved in each scheme is generally straightforward and will take between three and nine months to build. Environmental monitoring during construction will also be straightforward and will involve periodic site observations and interviews with workers and others, plus checks of reports and other documents. This will be conducted by MDSC environmental specialist assisted by the PMU environment officer (Sr. Assistant Engineer). Therefore, no separate budget required for MDSC environment management specialist.

117. The operation phase mitigation measures are again of good operating practices, which will be the responsibility of Pourashava. All monitoring during the operation and maintenance phase will be conducted by LGED therefore, there are no additional costs.

8.5 Budget for EMP

118. Most of the mitigation measures require the contractors/project authority to adopt good site practice, which should be part of their normal procedures already, so there are unlikely to be major costs associated with compliance.

119. Mitigation that is the responsibility of PIU and contractors will be provided as part of their management of the sub-project. The cost estimation for Environmental Mitigation Measures and Monitoring is given in the Table 14. The total mitigation and monitoring cost for the project is calculated as BDT 6,50,000.00 in addition to compliance to the LGED items code EMP-1.54(a-i) or 27, 28 and 29 of GCC of tender documents and IEE to the entire satisfaction of E-I-C.

Table 15: EMP in Bidding Document
Table 16

EMP Task No.	Mitigation and Monitoring Items	Unit	Cost/Unit	Total Unit	Total Cost
1.0	**Pre-construction Period**				
1.1	Obtaining of SSC/NOCs	Included in Project Preparation Cost			
1.2	Updating of EMP	Included in Project Preparation Cost			
1.3	Existing Utilities	Included in Engineering Cost			
1.4	Construction Camps, & Stock Yards	Included in Engineering Cost			
1.5	Sources of Materials	Included in Engineering Cost			
1.6	EMP Implementation Training	No.	25000	1	25000
1.7	Environmental Quality Test-Baseline				
	Air Quality Test (R-009)	No.	20,000	1	20,000
	Noise & Vibration (R-009, DS-03, DS-04, DS-16)	No.	5,000	4	20,000
	Soil Quality Test (R-009, DS-04)	No.	15,000	2	30,000
	Groundwater Quality Test (R-009, DS-04)	No.	10,000	2	20,000
	Surface Water Quality Test (DS-03, DS-04, DS-16)	No.	10,000	3	30,000
2.0	**Construction Period & After Completion works**				
2.1	Topography, Landforms, and Geology	Monitoring by Contractor			0
2.2	Soil Quality Test (R-009, DS-04)	No.	15,000	4	60,000
2.3	Surface Water Quality Test (DS-03, DS-04, DS-16)	No.	10,000	6	60,000
2.4	Groundwater Quality Test (R-009, DS-04)	No.	10,000	4	40,000
2.5	Air Quality Test (R-009)	No.	20,000	2	40,000
2.6	Noise & Vibration (R-009, DS-03, DS-04, DS-16)	No.	5,000	8	40,000
2.7	Waste Pollution	Monitoring by Contractor			0
2.8	Aesthetics	Monitoring by Contractor			0
2.9	Biodiversity	Monitoring by Contractor			0
2.10	Traffic Congestion	Monitoring by Contractor			0
2.11	Socio-economic Status	Monitoring by Contractor			0
2.12	Community Health and Safety	Lump-sum			50000
2.13	Labour Shed and Workers Health and Safety	Lump-sum			1,30,000
2.14	Post-construction Clean-up	Lump-sum			20,000
2.15	Submission of EMP Implementation Report	No.	10000	1	10,000
	Other Expenses during Construction Period				
	If necessary, no tree Plantation along road side	No.	550	100	55,000
3.0	**Operation Period**				
3.1	Air Quality	Pourashava O&M Budget			0
3.2	Noise Level	Pourashava O&M Budget			0
3.3	Surface/Waste Water Quality	Pourashava O&M Budget			0
3.4	Health & Safety	Pourashava O&M Budget			0
3.5	Waste Management	Pourashava O&M Budget			0
3.6	Road Accident	Pourashava O&M Budget			0
	Grand Total:	**6,50,000.00**			
In words (TK): Six Lacs Fifty Thousand Taka only.					

Note: Cost of the EMP items should be as fixed budget

9. MONITORING AND REPORTING

120. As a results-based loan, the LGED has to ensure that environmental and social safeguard impacts and risks are adequately addressed. Periodic monitoring by the Safeguard Cell, MDSC environmental and social safeguard experts and the designated safeguard focal personal PIU will help to apply ESMF to the IUGIP RBL Program. With ADB's assistance, the LGED will develop a mechanism to reduce safeguard risks through credible results verification mechanism built into the project.

121. The Executing Agency and ADB will have their own safeguard compliance monitoring systems. At the PMU level the Safeguard team will develop a safeguard monitoring methodology for the RBL program with the support and of MDSC. The PMU will:

i. Establish and maintain procedures to monitor the progress of implementation of safeguard plans. For the RBL program, the key safeguard implementation plans will be the EMP for each sub - project and resettlement plans for subprojects where involuntary resettlement impacts are triggered.
ii. With the assistance of the MDSC safeguard experts will verify the subproject's compliance with safeguard measures and its progress toward intended outcomes.
iii. Document and disclose monitoring results and identify necessary corrective and preventive actions in semi-annual monitoring reports.
iv. Submit monitoring reports on safeguard measures, as agreed, to ADB for review and approval.
v. Follow up on these actions to ensure progress toward the desired outcomes.

122. PIUs will monitor implementation of EMPs, Resettlement Plans, TMRESC Development Plans of the RBL program activities /subprojects with the support of the MDSC. The contractor will conduct day to day implementation of these plans on site and submit monthly reports to their respective PIUs. The monthly reports will include compilation of copies of monitoring sheets accomplished and duly signed by the contractors' EHS Officers (or equivalent) on a weekly basis. The PIUs, assisted by MDSC, will submit quarterly safeguards monitoring reports to PMU.

123. MDSC safeguards expert at PMU, will consolidate monitoring reports, and prepare a consolidated semi-annual environmental and social monitoring report (ESMR) for overall RBL Program. PMU shall review and approve these reports and will be disclosed on the LGED/PMU website. These monitoring and reporting activities and tasks shall continue throughout the implementation of the program. In the annual progress reports of the RBL program submitted to ADB, PMU will include environmental and social safeguards sections. PMU will report status and compliance of safeguards program actions periodically to ADB. ADB will conduct review of safeguard compliances of RBL program activities/subprojects on a sample basis during the periodic review missions.

10. CONCLUTION

124. Planning principles and design considerations have been reviewed and incorporated into the site planning process whenever possible. Preliminary designs integrate a number of measures, both structural and non-structural, to mainstream climate resilience into the sub-project. Thus, environmental impacts as being due to the project design or location were not significant.
125. Most of the individual elements of the sub-project are relatively small and involve straightforward construction and operation, so impacts will be mainly localized and not greatly significant. Most of the predicted impacts are associated with the construction process, and are produced because that process is invasive, involving trenching and other excavation. However, the routine nature of the impacts means that most can be easily mitigated. In the operational phase, all facilities and infrastructure will operate with routine maintenance, which should not affect the environment. Facilities will need to be repaired from time to time, but environmental impacts will be much less than those of the construction period as the work will be infrequent, affecting small areas only.
126. Mitigation measures have been developed to reduce all negative impacts to acceptable levels. Mitigation will be assured by a program of environmental monitoring to ensure that all measures are implemented, and will determine whether the environment is protected as intended. It will include observations on- and off-site, document checks, and interviews with workers and beneficiaries. Any requirements for corrective action will be reported to the ADB.
127. The stakeholders were involved in developing the IEE through discussions on-site and public consultation, after which views expressed were incorporated into the IEE and in the planning and development of the sub-project. The IEE will be made available at public locations in the city and will be disclosed to a wider audience via the ADB and LGED websites. The consultation process will be continued and expanded during project implementation to ensure that stakeholders are fully engaged in the project and have the opportunity to participate in its development and implementation.
128. The PMU and MDSC will be responsible for monitoring. The MDSC will submit monthly monitoring reports to PMU, and the PMU will send semi-annual monitoring reports to ADB. ADB will post the environmental monitoring reports on its website.
129. The EMP will assist the PMU, MDSC, and contractors in mitigating the environmental impacts and guide them in the environmentally sound execution of the proposed sub-project. The EMP will also ensure efficient lines of communication between the implementing agency, project management unit, and contractors. A copy of the EMP shall be kept on-site during the construction period at all times. The EMP shall be made binding on all contractors operating on the site and will be included in the contractual clauses. Non-compliance with/or any deviation from the conditions set out in this document shall constitute a failure in compliance.
130. The citizens of Charghat Pourashava will be the major beneficiaries of this sub-project. The improved roads will provide a more efficient and effective transport route, which should improve the overall economy by reducing time spent idle in traffic by delivery vehicles, employees and customers.
131. Therefore, the proposed sub-project is unlikely to cause significant adverse impacts and net environmental benefits to citizens of Charghat Pourashava will be positive. The potential impacts that are associated with design, construction, and operation can be mitigated to standard levels without difficulty through proper engineering design and the incorporation or application of recommended mitigation measures and procedures.
132. Based on the findings of the IEE, there are no significant impacts and the classification of the sub-project as Category “B” is confirmed. No further special study or detailed environmental impact assessment (EIA) needs to be undertaken to comply with ADB. All required issues have been assessed to the best of our knowledge and no further studies are required to comply with ADB procedures or the laws of GoB.

APPENDICES

Appendix 1: Environmental Screening and Categorization Form

Eligibility & Categorization Form;

Country/ Project No./ Project Title		Improving Urban Governance and Infrastructure Program (IUGIP)
Subproject title		Urban transport road and drainage improvement RBL sub-project
Project Executing Agency		LGED, Dhaka
Project Implementing Agency		Charghat Pourashava
Modality		RBL progress
Is Project eligible for funding under the RBL Program? [√] Yes [ ] No *(Ref DOE of ECR 2023)*		
Environment Impact categorization [√] New [ ] Re categorization – Previous Category [ ]		
[ ] **Category A** (Cat A - Not eligible for funding under the RBL)		
[√] **Category B** [ ] **Category C**		
(Ref Checklist- Rapid Environmental Assessment (REA) checklists)		
Prepared by: Syed Muktaderul Islam, Jr. Environmental Specialist		
Environmental Specialist (Name, title, signature): Date;		
For Project Executing Agency / PMU (Name, title, signature):		

Checklist 1 - Project Exclusion Screening Checklist for Environmental Safeguards

The following checklist shall be completed before inclusion of any activity/subproject in the RBL program. If Answer to any of the mentioned criteria is 'Yes' then such activity/subproject will not be eligible and shall be excluded from the RBL program.

	Questions	Response		Remarks /Clarifications
		Yes	No	
1.	**Type and Nature of Subproject**			
1.1	Proposed activity / subproject classified under the Red Category per ECR 2023?		√	Complied the ECR 2023 for classification
1.2	Proposed activity / subproject includes components involving prohibited investment activities per ADB SPS?		√	Complied REA for prohibited list
2.	**Location of Proposed Subproject**		√	
2.1	Proposed activity/subproject located in ecologically sensitive areas such as protected areas (national parks, wildlife sanctuaries), notified wetlands or wetlands of significant value, critical habitats?		√	
2.2	Proposed activity/subproject located in world heritage sites, and/or within 250 m from the core zone of outer boundary of the world heritage area		√	
2.3	Proposed activity located within monuments/sites protected by Department of Archeology, Government of Bangladesh?		√	
3.	**Potential impacts**			
3.1	Proposed activity/subproject may significantly impact mangroves, wetlands, estuaries, buffer zones of protected Areas etc?		√	
3.2	Proposed activity/subproject may potentially lead to encroachment/damage of physical cultural resources with significant value and/or places recognized by government agencies (e.g., Department of Archeology), which may include places of worship, cultural heritage sites, graves/cemeteries, historical monuments, etc.		√	

3.3	Proposed activity/subproject likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented, and may affect an area larger than the sites or facilities subject to physical works (i.e., category A projects as per ADB SPS 2009)		√	

REA check list

Instructions:

. The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Project Management Unit, for endorsement by the Environmental Officer of PMU and for approval by the Project Director

i. This checklist focuses on environmental issues and concerns

ii. Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures

Name of Subproject: Rehabilitation/Construction of 4682.00 m Roads by RCC & DBC respectively in 7 locations, including 79 m Protection Works (Palisading), & Construction of 1820.00 m RCC Drains in 5 Locations at Charghat Pourashava, District: Rajshahi

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area adjacent to or within any of the following environmentally sensitive areas?		√	There are no buildings of archaeological and cultural heritage importance close to the sub-project.
• Cultural heritage site		√	There is no protected area at the proposed site
• Protected Area		√	There is no wetland area at the proposed site
• Wetland		√	Not Applicable
• Mangrove		√	Not Applicable
• Estuarine		√	Not Applicable
• Buffer zone of protected area		√	There is no special protected area for biodiversity within 5km aerial distance
• Special area for protecting biodiversity		√	There are no buildings of archaeological and cultural heritage importance close to the sub-project.
B. Potential Environmental Impacts Will the Project cause			
▪ encroachment on historical/cultural areas; disfiguration of landscape by road embankments, cuts, fills, and quarries?		√	
▪ encroachment on precious ecology (e.g. sensitive or protected areas)?		√	
▪ alteration of surface water hydrology of waterways crossed by roads, resulting in increased sediment in streams affected by increased soil erosion at construction site?		√	
▪ deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?		√	Construction contractors will be required to provide sanitation facilities and ensure proper waste management at all times. **Hence this is not applicable, local people's will be construction site**
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation during project construction and operation?		√	The environmental impact related to the construction will be minor in nature and mostly limited to the duration of construction
▪ noise and vibration due to blasting and other civil works?	√		
▪ disproportionate impacts on the poor, women and children, Indigenous		√	

▪ other social concerns relating to inconveniences in living conditions in the project areas that may trigger cases of upper respiratory problems and stress?		√	
▪ hazardous driving conditions where construction interferes with pre-existing roads?			
▪ poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases (such as STI's and HIV/AIDS) from workers to local populations?		√	
▪ creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?		√	
▪ accident risks associated with increased vehicular traffic, leading to accidental spills of toxic materials?		√	
▪ increased noise and air pollution resulting from traffic volume?	√		Short time at during construction period
▪ increased risk of water pollution from oil, grease and fuel spills, and other materials from vehicles using the road?		√	
▪ social conflicts if workers from other regions or countries are hired?		√	
▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		√	
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?		√	The environmental impacts related to the construction of the project will be minor in nature and mostly limited to the duration of construction
▪ community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning.		√	

Appendix 2: Waste Management Plan (Construction Period)

1. GENERAL

Considerable quantities of wastes (general & construction) will be generated due to the 1-year construction of the sub-project components. Two types of wastes will be generated during construction:

a. General Waste:
– Organic waste (foods, fruits, tree leaves etc.); and
– Inorganic (such as papers, plastic and glass bottles & containers, polythene etc.); and
b. Construction Waste:
– Construction wastes are: construction materials such as sand, piece of rocks, bricks, rods, bamboo, wood, geotextiles, remaining concrete & bentonite waste.

2. OBJECTIVES

The main objective of the WMP is to organize disposal of all wastes generated during construction in an environmentally acceptable manner specially consider the following:

- Health hazards of the project personnel as well as community people should not be occurred;
- Manage the wastes in such a way that environment (specially air, soil, water etc.,) will not be polluted;
- Odor means bad smell should not be generated;
- Always friendly environment at the construction sites and construction camps;
- Any waste should not be disposed into the river and any water bodies to avoid water pollution;
- Any waste should not be burnt; and
- Any waste should not be placed in earth holes/chambers.

3. POTENTIAL ENVIRONMENTAL IMPACTS

Major potential environmental impacts due to the lack of waste management are:

- All types of environmental pollutions such as air, soils, water (surface & ground) pollutions;
- Generation of odor;
- Increase of flies, mosquitoes, insects etc.,
- Health hazards; and
- Environmental nuisance at the project sites

4. STRATEGIES TO ADOPT

The following strategies need to be adopted for appropriate soil waste collection system to be functioned properly:

a. Setting waste collection bins (not permanent structure, movable high-quality movable plastic bins; See Figure 1) in strategic points of the construction camp and work sites.
b. Introduce solid waste bins for organic and non-organic waste.
c. Coordinate with the municipalities waste collection system so that the waste can be collected at midnight when the road transports are minimum.
d. Wash liquids needs to be drained out though the functioning drains. The liquid waste needs to be treated with bleaching power every evening before draining so that the waste water cannot create nuisance and local pollution.
e. The other strategies that might be adopted are explained in later paragraphs.



Figure 1: High quality plastic bins for solid waste collection

Aspect	Waste Type	Mitigation Measures	Proposed Reuse/Recycling/ Disposal
site clearing/disposal of debris	• Vegetation (logs, mulched timber, weeds) • Demolition of existing building	• Due care should be taken during site clearance and disposal of debris during demolition of existing building. • The waste should be stored at site ensuring that existing water bodies, road and drains within or adjacent to the site are kept safe and free and no blocking of drains • Prior clearance will be taken from concerned	Recycling/Disposal whereas applicable or where suitable and approved by PIU
Construction site waste	• Plastics, Concrete and • Timber/Steel formwork • Packaging Materials, papers • Empty containers and other drums • Metals and electrical cabling	• The waste should be stored at PIU suggested location ensuring that existing water bodies, road and drains within or adjacent to the site are kept safe and free and no blocking of drains • Construction waste will be connected to dispose in Pourashava existing/proposed waste management system	Recycling/Disposal/ Re-use
Construction camp	• Waste generated by food, papers, weir, wood, polythene and empty packets • Labor camp waste generated by workers	• It will be made mandatory for waste to be segregated right at the source of waste generation • The waste should be stored at construction camp in separate dustbin • labor camp waste will be connected to dispose in Pourashava existing/proposed waste management system	Re-use/ Recycling/Disposal whereas applicable
Traffic movement with waste	• Waste generated from construction site/labor camp	• Ensure covered the waste during Traffic movement • Adequate traffic control signals and barriers should be used in case traffic is to be diverted during debris disposal. All efforts should be made to ensure avoidance of traffic jam, which otherwise results in air pollution, noise pollution and public unrest.	Disposal

Table 1: Mitigation Measures for Sector-wise Waste

5. METHOD OF DISPOSAL OF WASTES

The Contractor will collect the general wastes in separate waste bin at sources (means organic waste in one bin & inorganic waste in another bin) and dumped at the designated waste disposal site. The contractor will construct concrete waste disposal site; means concrete floor and wall and covered by shed to avoid, air, bad smell, soil and ground water pollutions. Based on the quantity of general waste (organic & inorganic waste), the following two chambers (rooms) of the concrete disposal site will be constructed by Contractor:

Just after filling one chamber (say after 6 months) by organic waste through pocket gate, it should be covered by earth (soils) properly & keeps it for about 6 months for converting organic fertilizer for the agricultural lands. After filling 1st chamber by organic waste, disposing of waste will be started for 2nd chamber.

The inorganic waste will be collected in the waste collection bins. Just after filling, these inorganic wastes can be given to the vender free of cost.

The Contractor will collect construction waste as mentioned above separately and dump in to the designated room at the construction camp. Just after filling the room, Contractor will sale these waste to the vender for re-cyclic.

The Contractor will maintain log book for the measurement of quantity of the wastes (especially hazardous wastes) disposed every day.

6. INSTITUTIONAL ARRANGEMENT

Contractor is mainly responsible for design, construction, maintenance as well as environmental monitoring for the disposal of waste. Environmental Specialist of the MDSC is responsible for monitoring of the disposal. The PIU of the Pourashava will setup a 'Waste Management Committee' with the representatives of the MDSC and contractor to effectively disposing the wastes and distribution of organic fertilizer to the farmers and inorganic wastes to the venders. The committee is also responsible for monitoring procedure for the collection and carrying of wastes without causing any environmental hazards.

Appendix 3: Site & Design Considerations to Meet ESMF Environmental Criteria

Environmental Guidelines for Subproject site selection, planning and design		Remarks
1. Overall selection guidelines - applicable to all subprojects		
(i) Comply with all requirements of relevant national and local laws, rules, and guidelines, including obtaining environmental clearance certificate (ECC) from DOE for all subprojects classified as red / orange / green per Bangladesh Environmental Conservation Act, 1995		-
(ii) Comply with all requirements of ADB SPS 2009 and follow procedures set in this environmental assessment and review framework (ESMF)		-
(iii) Ensure that subproject design should reflect inputs from public consultation		
(iv) Avoid locations in forests, mangrove areas, estuaries, buffer zones of protected areas	(i) Check and confirm the eligibility through exclusion criteria before proceeding further on such sensitive sites (ii) if eligible, and unavoidable: - Approval from concerned authority -Alternative site analysis to justify site selection -confirm via detailed baseline and impact assessment that the project will not lead to significant impacts on respective areas -EMP to include measures to avoid, minimize, mitigate impacts, and monitoring actions to confirm mitigation	
(v) Avoid locations within 100 m of protected monuments/sites protected by department of archeology, government of Bangladesh (vi) Avoid locations within 1 km of UNESCO notified protected monuments / world heritage sites 10.	If unavoidable - conduct site screening by heritage expert, and conduct heritage assessment study if warranted; integrate recommendations into design, construction, and operation -ensure that no damage / disruption to such places/monuments -obtain necessary clearance and permissions -EMP to include measures to avoid destruction / disturbance of such places -Provide "chance find" procedures in the EMP that include a pre-approved management and conservation approach for materials that may be discovered during project implementation.	
(vii) Avoid tree-cutting where possible. Retain mature roadside trees which are important/valuable or historically significant. If any trees will have to be removed, plant two new trees for every one that is lost. (viii) Preference shall be given to planting indigenous or local tree species.	For any tree to be cut, consider replacement of 2:1.	
(ix) Ensure all planning and design interventions and decisions are made in consultation with local communities and include women. Reflect inputs from public consultation and disclosure for site selection.	All consultations should be documented, and concerns expressed by public addressed in IEEs.	
(x) Synchronize all road improvement and pipe laying works (to extent possible) to minimize disturbance and optimize use of resources (e.g., water pipes laid prior to road improvements).	Coordinate planning of works with *Pourashava.*	
(xi) If subproject includes existing facilities[52] to be rehabilitated or expanded and/or associated	For non-compliances, provide corrective action for each area of concern including cost and schedule to be included in the subproject EMP.	
(xii) Locate all new facilities/buildings at sites where there is low risk of flooding or other hazards that might impair functioning of or present a risk of damage to water treatment plants, tanks/reservoirs, or their environs.	Flood statistics data of the project area needs to be reviewed. Location restriction may be reviewed depending on site availability, and flood or other hazards control planning.	

Environmental Guidelines for Subproject site selection, planning and design	Remarks
3. Urban roads	
(i) Include the provision of new or improved storm water drainage to remove the increased runoff caused by increasing the road surface area	
(ii) Shall not lead to alteration of surface water hydrology of waterways crossed by roads; ensure appropriate cross drainage structures	
(iii) Ensure that drainage system including cross drainage works are designed adequately considering the raised road levels that may create barrier effect	
(iv) Include tree planting preferably with indigenous or local tree species and duly considering road safety issues, alongside roads to provide a natural barrier to noise and visual impacts and include additional physical barriers where required	
4. Drainage	
i. Outfalls should be to suitable drainage areas (*nallas*, canals, etc.) and avoid flooding to adjacent private lands.	
ii. Include measures to ensure the safe disposal of drain dredge (e.g., to dumpsite or landfill) without causing an environmental hazard.	
iii. where required, include provision for installation of regulator to control inflow/ outflow through drain to prevent backflow of water through drain (e.g., due to high water level at downstream discharge point, such as khal/ river)	
iv. Include measures to avoid pollution of downstream water body due to disposal of polluted water from drain	Ensure that drains that may be contaminated with wastewater are not connected to water bodies (such as local ponds) that are used by community for various purposes. Do not allow direct connection to drain from sanitation facilities and/or wastewater with high organic load Ensure that no untreated / partially treated wastewater or industrial effluent is illegally discharged into drains by close coordination with Department of Environment Strictly follow the effluent discharge standard of DOE and consider introduction of small-scale treatment of polluted drain water before disposal (if needed)

Appendix 4: Health Safety Manual of Construction Workers

Parameters/issues	Workplace Hazards	Suggested PPE
Eye and Face protection	Flying particles, molten metal, liquid fuel, gases or vapors, light radiation.	Safety glasses with side-shields, protective shades, etc.
Head Protection	Falling objects, inadequate height clearance, and overhead power cords.	Helmets with top and side impact protection.
Hearing protection	Noise, ultra-sound.	Hearing protectors (ear plugs of ear muffs.)
Foot Protection	Falling or rolling objects, pointed objects. Corrosive or hot liquids.	Safety shoes and boots for protection against moving & falling objects, liquids and fuels.
Hand Protection	Hazardous materials, cuts or lacerations, vibrations, extreme temperatures.	Gloves made of rubber or synthetic materials (Neoprene), leather, steel, insulating materials, etc.
Respiratory Protection	Dust, vapors.	Facemasks with appropriate filters for dust removal and air purification spray, mists, vapors and gases). Single or multi-gas personal monitors, if available.
	Oxygen deficiency	Portable or supplied air (fixed lines.) on site rescue equipment.
Body/leg Protection	Extreme temperatures, hazardous materials, biological agents, cutting and laceration.	Insulating clothing, body suits, aprons etc. of appropriate materials.

Appendix 5: Sample Traffic Management Plan

A. Principles

One of the prime objectives of this TMP is to ensure the safety of all the road users along the work zone, and to address the following issues:

- The safety of pedestrians, bicyclists, and motorists travelling through the Construction zone;
- Protection of work crews from hazards associated with moving traffic;
- Mitigation of the adverse impact on road capacity and delays to the road users;
- Maintenance of access to adjoining properties; and
- Addressing issues that may delay the project.

B. Operating Policies for TMP

The following principles will help promote safe and efficient movement for all road users (motorists, bicyclists, and pedestrians, including persons with disabilities) through and around work zones while reasonably protecting workers and equipment.

(i) Make traffic safety and temporary traffic control an integral and high-priority element of every project from planning through design, construction, and maintenance.
(ii) Inhibit traffic movement as little as possible.
(iii) Provide clear and positive guidance to drivers, bicyclists, and pedestrians as they approach and travel through the temporary traffic control zone.
(iv) Inspect traffic control elements routinely, both day and night, and make modifications when necessary.
(v) Pay increased attention to roadside safety in the vicinity of temporary traffic control zones.
(vi) Train all persons that select, place, and maintain temporary traffic control devices.
(vii) Keep the public well informed.

C. Analyse the impact due to street closure

Apart from the capacity analysis, a final decision to close a particular street and divert the traffic should involve the following steps:

(i) Approval from the ULB/CMC/Public Works Department (PWD) to use the local streets as detours;
(ii) Consultation with businesses, community members, traffic police, PWD, etc, regarding the mitigation measures necessary at the detours where the road is diverted during the construction;
(iii) Determining of the maximum number of days allowed for road closure, and 3 incorporations of such provisions into the contract documents;
(iv) Determining if additional traffic control or temporary improvements are needed along the detour route;
(v) Considering how access will be provided to the worksite;
(vi) Contacting emergency service, school officials, and transit authorities to determine if there are impacts to their operations; and

If full road-closure of certain streets within the area is not feasible due to inadequate capacity of the detour Street or public opposition, the full closure can be restricted to weekends with the construction commencing on Saturday night and ending on Monday morning prior to the morning peak period.

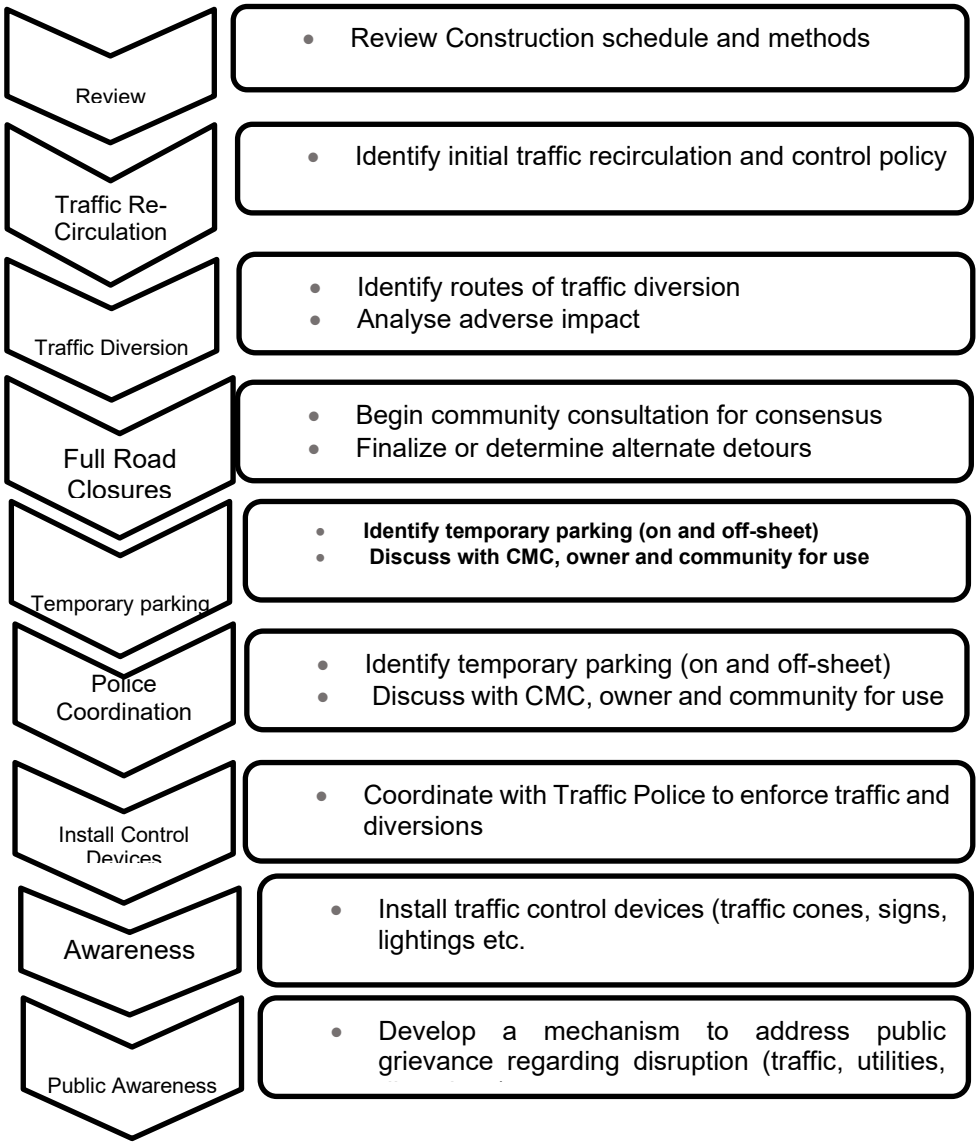


Figure A1: Policy Steps for the TMP

D. Public awareness and notifications

As per discussions in the previous sections, there will be travel delays during the constructions, as is the case with most construction projects, albeit on a reduced scale if utilities and traffic management are properly coordinated. There are additional grounds for travel delays in the area, as most of the streets lack sufficient capacity to accommodate additional traffic from diverted traffic as a result of street closures to accommodate the works.

The awareness campaign and the prior notification for the public will be a continuous activity which the project will carry out to compensate for the above delays and minimize public claims as result of these problems. These activities will take place sufficiently in advance of the time when the road blocks or traffic diversions take place at the particular streets. The reason for this is to allow sufficient time for the public and residents to understand the changes to their travel plans. The project will notify the public about the road blocks and traffic diversion through public notices ward level meetings and city level meeting with the elected representatives.

The PIU will also conduct an awareness campaign to educate the public about the following issues: (i)Traffic control devices in place at the work zones (signs, traffic cones, barriers, etc.);

(ii) Defensive driving behaviour along the work zones; and (iii)Reduced speeds enforced at the work zones and traffic diversions.
It may be necessary to conduct the awareness programs/campaigns on road safety during construction.

The campaign will cater to all types of target groups i.e., children, adults, and drivers. Therefore, these campaigns will be conducted in schools and community centres. In addition, the project will publish a brochure for public information. These brochures will be widely circulated around the area and will also be available at the PIU, and the contractor's site office. The text of the brochure should be concise to be effective, with a lot of graphics. It will serve the following purpose:

(i) Explain why the brochure was prepared, along with a brief description of the project;
(ii) Advise the public to expect the unexpected;
(iii) Educate the public about the various traffic control devices and safety measures adopted at the work zones;
(iv) Educate the public about the safe road user behaviour to emulate at the work zones;
(v) Tell the public how to stay informed or where to inquire about road safety issues at the work zones (name, telephone, mobile number of the contact person; and
(vi) Indicate the office hours of relevant offices.

E. Install traffic control devices at the work zones and traffic diversion routes

The purpose of installing traffic control devices at the work zones is to delineate these areas to warn, inform, and direct the road users about a hazard ahead, and to protect them as well as the workers. As proper delineation is a key to achieve the above objective, it is important to install good traffic signs at the work zones. The following traffic control devices are used in work zones:

- Signs
- Pavement Markings
- Channelizing Devices
- Arrow Panels
- Warning Lights

Procedures for installing traffic control devices at any work zone vary, depending on road configuration, location of the work, construction activity, duration, traffic speed and volume, and pedestrian traffic. Work will take place along major roads, and the minor internal roads. As such, the traffic volume and road geometry vary. The main roads carry considerable traffic; internal roads in the new city areas are wide but in old city roads very narrow and carry considerable traffic. However, regardless of where the construction takes place, all the work zones should be cordoned off, and traffic shifted away at least with traffic cones, barricades, and temporary signs (temporary “STOP” and “GO”).

Figure A4 to Figure A5 illustrates a typical set-up for installing traffic control devices at the work zone of the area, depending on the location of work on the road way, and road geometrics:

- Work on shoulder or parking lane
- Shoulder or parking lane closed on divided road
- Work in Travel Lane
- Lane closure on road with low volume
- Lane closure on a two-line road with low volume (with yield sign)

- Lane closure on a two-line road with low volume (one flagger operation)
- Lane closure on a two-lane road (two flagger operation)
- Lane closure on divided roadway
- Half road closure on multi-lane roadway
- Street closure with detour

The work zone should take into consideration the space required for a buffer zone between the workers and the traffic (lateral and longitudinal) and the transition space required for delineation, as applicable. For the works, a 30 cm clearance between the traffic and the temporary STOP and GO signs should be provided. In addition, at least 60 cm is necessary to install the temporary traffic signs and cones.

Traffic police should regulate traffic away from the work zone and enforce the traffic diversion result from full street closure in certain areas during construction. Flaggers/ personnel should be equipped with reflective jackets at all times and have traffic control batons (preferably the LGED type) for regulating the traffic during night time.

In addition to the delineation devices, all the construction workers should wear fluorescent safety vests and helmets in order to be visible to the motorists at all times. There should be provision for lighting beacons and illumination for night constructions.

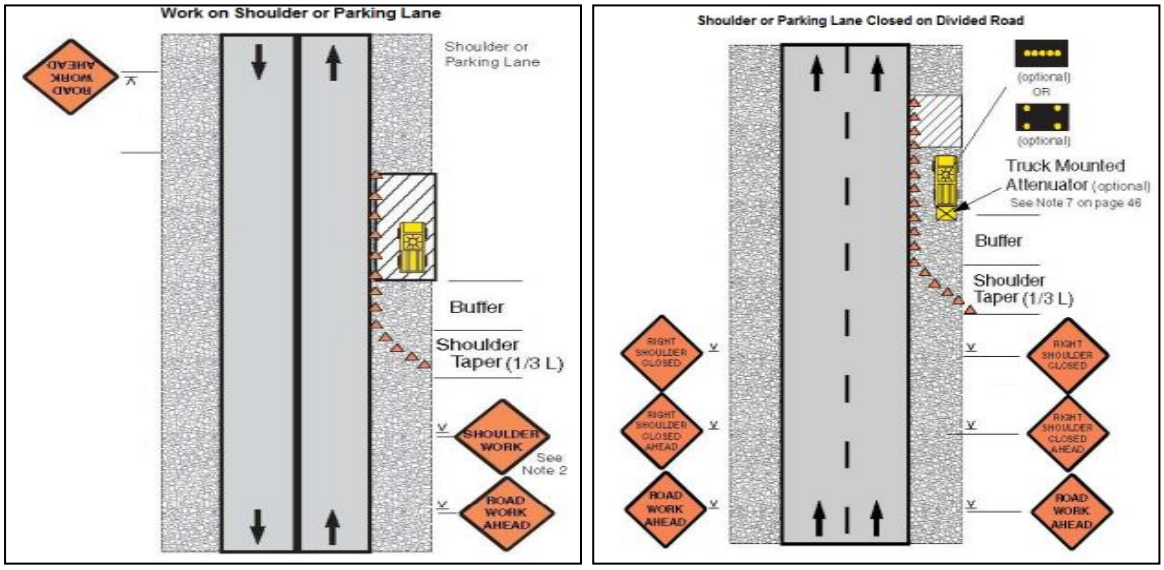
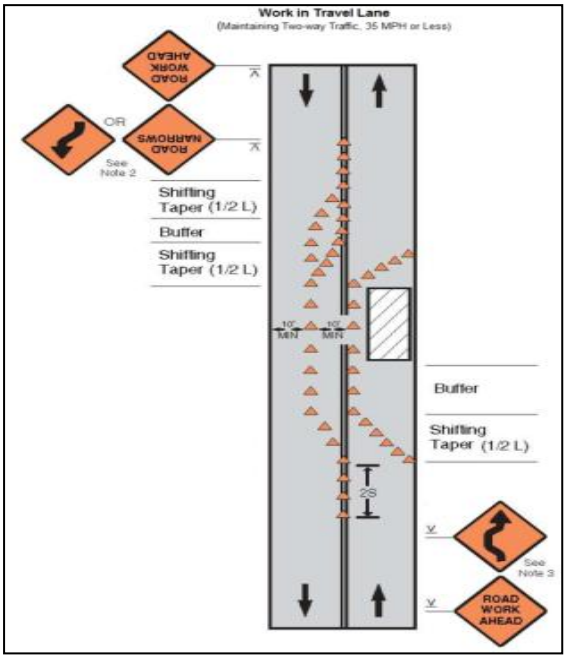


Figure A2 & A3: Work on shoulder or parking lane and shoulder or parking lane closed on divided road



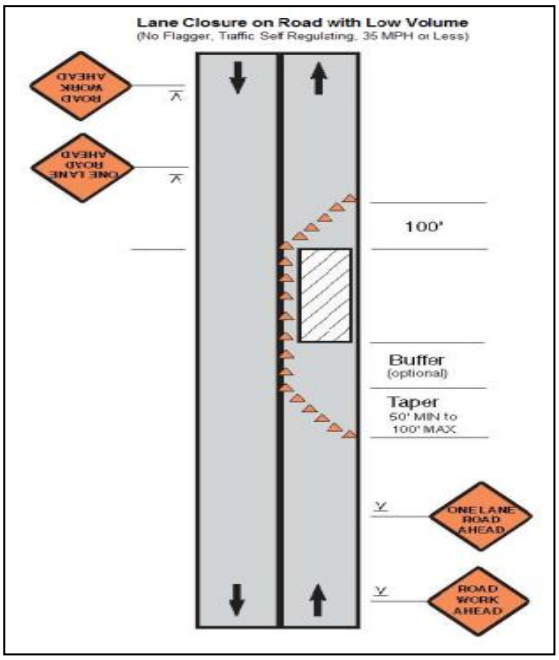


Figure A4 & A5: Work in Travel lane & Lane closure on road with low volume

Appendix 6: Consultation Meeting Photographs

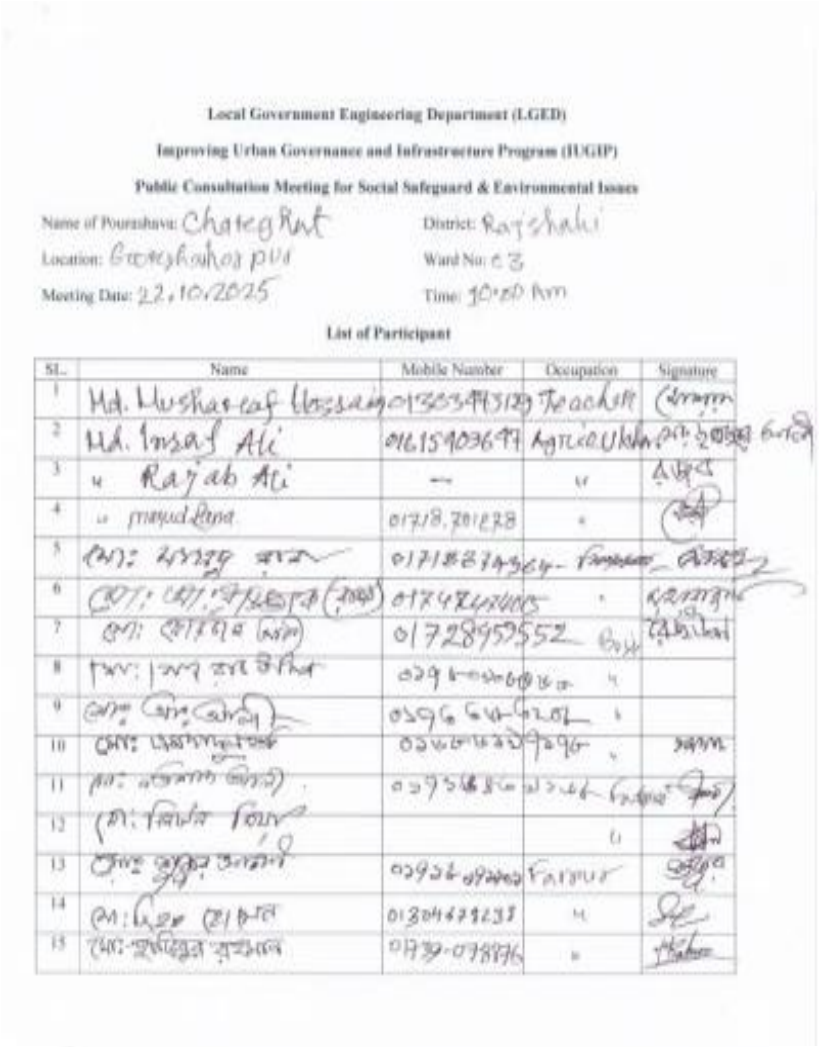
Photographs of Focus Group Discussion (FGD) for the sub-project of Pourashava are given below:





Public Consultation with Poura staff and local community at Bagha Pourashava

Appendix 7: Participants List of Consultation Meetings date and ward



Local Government Engineering Department (LGED)

Improving Urban Governance and Infrastructure Program (IUGIP)

Public Consultation Meeting for Social Safeguard & Environmental Issues

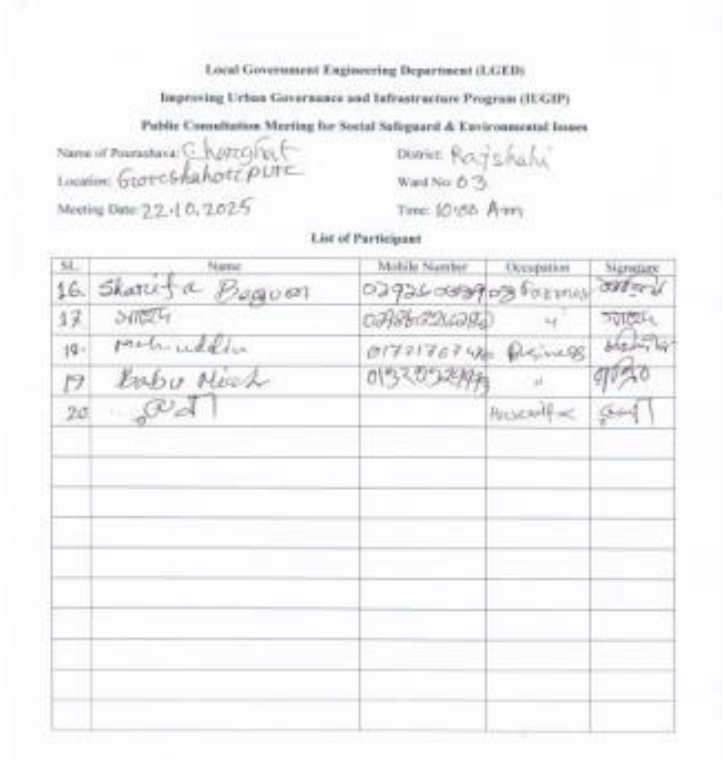
Name of Pourashava: Chategkut — District: Rajshahi

Location: Boroshahoz pur — Ward No: 03

Meeting Date: 22.10.2025 — Time: 10:50 Am

List of Participant

Sl.	Name	Mobile Number	Occupation	Signature
1	Md. Musharaf Hossain	01323493129	Teacher	
2	Md. Insaf Ali	01615903697	Agriculture	
3	" Rajab Ali	---	"	
4	" Mamud Reza	01718.701638	"	
5		01718874956		
6		01748424005		
7		01728957552		
8				
9				
10				
11				
12				
13		02926		
14		01304479233	"	
15		01739-078876	"	



Local Government Engineering Department (LGED)

Improving Urban Governance and Infrastructure Program (IUGIP)

Public Consultation Meeting for Social Safeguard & Environmental Issues

Name of Pourashava: Ghoraghat — District: Rajshahi

Location: Boroshahorepur — Ward No: 03

Meeting Date: 22.10.2025 — Time: 10:50 Am

List of Participant

Sl.	Name	Mobile Number	Occupation	Signature
16	Sharifa Begum	02926	Business	
17			"	
18	Mahabbia	01721767	Business	
19	Babu Miah	01530	"	
20			Housewife	

Appendix 8: SOP for Oil & Chemical Handling

1. Aim and Scope

The objective of this SOP is to specify detailed rules, times and responsibilities related to the use, storage and handling of oils and chemicals (hereunder referred to as "chemicals") within working areas by the Contractor.

This document is to be given by the PIU Responsible person to the Contractor when the contract becomes effective. The Responsible Engineer shall ensure that the Contractor has clearly understood these good practices for chemical handling and shall abide by them.

2. Responsibilities

- Contractor personnel responsible for the task
- Coordinate and ensures that the Contractor is working in accordance with this SOP
- Ensures that personnel assigned to handle and transport chemicals are properly trained and equipped to handle chemicals safely, and prepared to contain and clean accidental spills
- Ensures that chemicals are labelled and placed in designated location according to this SOP
- Provides Safety Data Sheet of the chemicals to be used to the responsible person
- Carry out handling of chemicals from one location to another
- Responsible for regular checks required in the implementation of this SOP

3. Operative Rules

The responsible person of Contractor is to ensure that the SOP is following as per the requirement. This procedure also defines the training requirements, handling methods and precautions to be taken during transportation of chemicals from one site to another, in order to minimize any hazards these chemicals might pose to human beings as well as to the environment.

3.1 Chemicals handling planning

- The person planning the transfer of chemicals must be informed of quantities to be transferred, the type of packaging and the scheduled locations when assessing the methods and means necessary for the handling.
- The person in charge of the transfer and/or handling of chemicals must:
  - Clearly identify the chemical and be aware of the hazards involved.
  - Ensure that the chemicals being sanctioned for transfer are stored and stacked in a correct and safe manner as detailed in the subsequent clauses of this SOP to avoid accidental spills and possible injuries.
- The Contractor must provide his personnel with the Personal Protective Equipment (PPE), adequate means of transportation and spill control materials.

3.2 General safety requirements

When a hazardous chemical is handled, the following recommendations should be observed:

- The Contractor must ensure that his personnel are trained in chemical handling and spill management.
- The Contractor must ensure that adequate manpower is assigned to the task in order to carry out the job safely.
- The Contractor has to ensure that the competent personnel are provided with the appropriate PPE.
- Adequate materials should be readily available for spill management and the action to be taken in case of Oil and/or Chemical Spills should include:
  - Use of appropriate PPE
  - Ensure that the necessary spill kit material is handy and used Isolate source
  - Inform responsible person so he can inform the required personnel so that the spill can be contained with minor consequences.
  - Contain spill as far as possible, especially if it can go into the road or drains
  - Inform the responsible person if the spill is in the road and can cause a hazard to traffic such that he can place warning signs and advice Police to assist controlling traffic, if necessary

- Recover spill using suitable means:
  (i) Bucket & shovel / dustpan work well on smooth floors
  (ii) Absorbent pads which can each absorb (approx.) 1 litre
  (iii) Sand or other oil absorbing particulates
- Recovered chemical and absorbent material is to be dealt with as "hazardous waste".

3.3 Chemicals Usage

When using chemicals on work premises, the Contractor has to ensure that the following rules/recommendations apply:

- Wherever possible, chemicals and their compounds used shall be free from Mercury, Chromium and Zinc.
- Use CFC and HCFC-free sprays and products.
- All chemicals used are to be accompanied by the "Safety Data Sheet (SDS)".
- Wherever possible, the use of toxic and very toxic substances as well as carcinogenic substances shall be avoided.
- The Contractor should ensure that any chemicals used within work premises are not stored in a damaged container/drum and that they are labelled properly.

3.4 Labelling and identifying chemicals

The Contractor should ensure that:

- In case the container or packaging needs to be changed or substances are to be transferred to a smaller container for safer handling, the Contractor must fix a label to the new container. It must be ensured that the label is firmly affixed to the container or alternatively, the name of the hazardous chemical, as indicated in the original label, is to be clearly written directly onto the new container. Apart from the chemical name, the common name of the chemical is also to be written on the container to ensure that the container's content is easily understood by the personnel who will be using it. Moreover, each container should depict pictograms to indicate constituent chemical properties.
- When reusing a container, it must be ensured that the original label on the old container is removed to eliminate any possibility of incorrect use of the chemical.
- When identifying containers, cans, etc. of chemicals, it must be ensured that a permanent marker is used and text is written clearly (preferably in block letters) and in an adequate font size to allow for easy identification.

3.5 Handling chemicals

All Contractor personnel handling chemicals should adhere to the following rules and recommendations:

- Handler/end user should be trained in chemical handling prior any handling
- Use of PPE is mandatory
- The specific SDS of the chemicals are always to be consulted prior to the handling of a chemical
- Chemical SDSs for each chemical being used, and safety and environmental information shall be available on site where the chemicals are being used
- Mixing or pouring of chemicals should be performed on waterproof surfaces to prevent soil contamination
- Handling of hazardous chemicals (transportation, change of containers, etc.) should always be kept to a minimum
- Chemical containers are not to be left open and are always to be kept closed when not in use
- Mixing of hazardous chemicals should be avoided since mixing of incompatible chemicals can induce emissions of toxic gases and other dangerous reactions
- The right amount of product is to be used (check product instructions to dilute chemicals)
- Hazardous chemicals are never to be left unattended

3.6 Storage of chemicals

If any chemicals are to be stored on work premises for the duration of works, the Contractor must ensure that the following rules are put into practice:

- It should be verified that all legal limits related to chemical storage are being met.
- Storage areas for the chemicals are to be defined.
- All dangerous chemicals must be located in the appropriate storage area unless currently in use.
- Storage areas should always be bunded and covered to avoid leaching of pollutants through rainwater.
- The capacity of the chemical storage basin or containment should always be the greater
- Any spill occurring within the bunded storage area shall be isolated from the drainage and sewage systems.
- It must be ensured that the capacity and characteristics of storage areas, shelves and any other device used to store chemicals are adequate for the specific operation.
- Good housekeeping must be ensured in storage areas
- Chemicals cannot be stored and/or located in areas such as passageways, vehicles, and so on.
- It must be ensured that incompatible chemicals are segregated within the storage areas.
- Chemical products must be stored according to their compatibility. Acids are to be stored away from bases (such as Alkalis). Flammable products are to be stored away from all other products and especially away from potential fire hazards.
- Storage areas for explosives shall be designed in such a way as to prevent hits, falls or any other potential cause of explosion and to protect the surroundings against explosions.
- Chemicals should ideally not be stored under direct sunlight, in warm areas or near heat sources.
- When storing chemicals, the label and SDS are to be consulted for correct storage of each substance.
- Certain chemicals or substances have to be stored in well-ventilated areas or at a specific humidity and temperature.
- It must be ensured that all containers such as drums and their lids are in good condition, are safe to use and there is no possibility for spills or leakages.

3.7 Control and monitoring activities

The Contractor has the responsibility to:

- Check periodically for correct identification, handling, use and storage of process chemicals at point-of-use;
- Check periodically that all waterproof areas where chemicals are located are in good
- condition and that there are no surface irregularities or cracks. This is especially important for storage of large containers;
- Check periodically for spills and leaks;
- Check periodically on the correct use of products by his personnel and give adequate training if deemed necessary.
- Visual checks shall suffice.

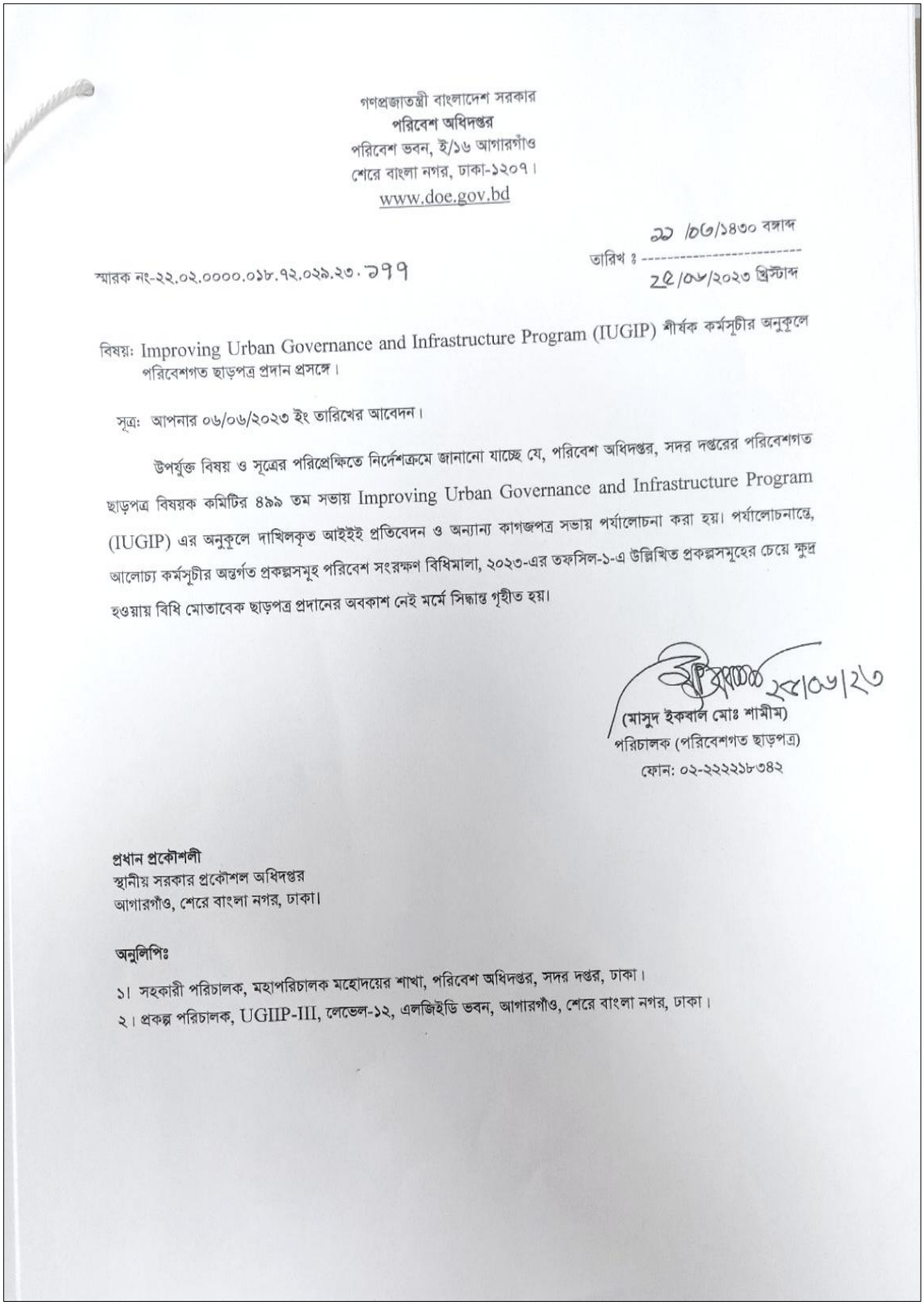
3.8 Abnormal conditions and emergency situations

In case of an accident or emergency such as spills, dangerous chemical reactions, etc., the Contractor shall ensure that the following recommendations are followed:

- Necessary safety protection devices (gloves, glasses, etc.) are to be worn
- The hazardous chemical causing the problem is to be identified
- If the level of risk is acceptable, all valves are to be isolated and taps turned off in order to stop the spill from spreading further out in the accident area as well as to contain the spill as much as possible and stop it from reaching unprotected areas, such as areas which are not waterproof, sewage discharges, etc.;
- The Responsible Person is to be informed so as to intervene;
- The accident area is to be cordoned off;

- Given that the danger level is acceptable, appropriate materials are to be used to clean up the spill. Rags, sawdust or other combustible materials are not to be used to collect combustible agents or flammable chemicals;
- Access to the area is only to be allowed when the spill has been contained, cleaned and the area is risk free.
- In case of damage to a container, this is to be replaced and it must be ensured that the container is clearly and correctly identifiable and disposed of in the appropriate manner.
- Proper absorbent materials should always be readily available for use close to all chemical storage and handling areas.

Appendix 9: Approved DoE Letter for IUGIP



গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
পরিবেশ অধিদপ্তর
পরিবেশ ভবন, ই/১৬ আগারগাঁও
শেরে বাংলা নগর, ঢাকা-১২০৭।
www.doe.gov.bd

স্মারক নং-২২.০২.০০০০.০১৮.৭২.০২৯.২৩.৩৭৭

তারিখ ঃ ২২/০৬/১৪৩০ বঙ্গাব্দ
২৫/০৬/২০২৩ খ্রিস্টাব্দ

বিষয়: Improving Urban Governance and Infrastructure Program (IUGIP) শীর্ষক কর্মসূচীর অনুকূলে পরিবেশগত ছাড়পত্র প্রদান প্রসঙ্গে।

সূত্র: আপনার ০৬/০৬/২০২৩ ইং তারিখের আবেদন।

উপর্যুক্ত বিষয় ও সূত্রের পরিপ্রেক্ষিতে নির্দেশক্রমে জানানো যাচ্ছে যে, পরিবেশ অধিদপ্তর, সদর দপ্তরের পরিবেশগত ছাড়পত্র বিষয়ক কমিটির ৪৯৯ তম সভায় Improving Urban Governance and Infrastructure Program (IUGIP) এর অনুকূলে দাখিলকৃত আইইই প্রতিবেদন ও অন্যান্য কাগজপত্র সভায় পর্যালোচনা করা হয়। পর্যালোচনান্তে, আলোচ্য কর্মসূচীর অন্তর্গত প্রকল্পসমূহ পরিবেশ সংরক্ষণ বিধিমালা, ২০২৩-এর তফসিল-১-এ উল্লিখিত প্রকল্পসমূহের চেয়ে ক্ষুদ্র হওয়ায় বিধি মোতাবেক ছাড়পত্র প্রদানের অবকাশ নেই মর্মে সিদ্ধান্ত গৃহীত হয়।

২৫/০৬/২৩
(মোসুদ ইকবাল মোঃ শামীম)
পরিচালক (পরিবেশগত ছাড়পত্র)
ফোন: ০২-২২২২১৮৩৪২

প্রধান প্রকৌশলী
স্থানীয় সরকার প্রকৌশল অধিদপ্তর
আগারগাঁও, শেরে বাংলা নগর, ঢাকা।

অনুলিপিঃ

১। সহকারী পরিচালক, মহাপরিচালক মহোদয়ের শাখা, পরিবেশ অধিদপ্তর, সদর দপ্তর, ঢাকা।
২। প্রকল্প পরিচালক, UGIIP-III, লেভেল-১২, এলজিইডি ভবন, আগারগাঁও, শেরে বাংলা নগর, ঢাকা।