GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

Ministry of Local Government, Rural Development and Co-operatives

Local Government Division

Local Government Engineering Department

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

Project ID: P167762 **IDA Credit No. 5561-BD**




Design and Supervision Consultancy

Environmental Screening Report

For Improvement of road by RCC pavement in Mirakata from Ch:00-2000m in Kutubdia Upazila under Cox's Bazar District.

Under the package no. EMCRP/AF/W15

Development Design Consultants Ltd.

March 2022

ACRONYMS

BOQ	Bill of Quantities
D&SC	Design and Supervision Consultant
DoE	Department of Environment
DRP	Displaced Rohingya people
EA	Environmental Assessment
EC	Electrical Conductivity
EMCRP	Emergency Multi-Sector Rohingya Crisis Response Project
ESMP	Environmental and Social Management Plan
ERP	Emergency Response Plan
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FDMN	Forcibly Displaced Myanmar National
FGD	Focus Group Discussion
FSM	Faecal Sludge Management
GBV	Gender Based violence
GPS	Government Primary School
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bricks
IEFs	Important Environmental Features
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
IWM	Institute of Water Modeling
LGED	Local Government Engineering Department
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SMC	School Management Committee
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UNHCR	The United Nations High Commissioner for Refugees
VAT	Value-Added Tax
WB	World Bank

Contents

Executive Summary

Rohingya influx in Bangladesh has been one of the highlighted issues of this decade. This has definitely modified our way of thinking for the future development of the country. This forcefully displaced population has posed challenges for the district of Cox's bazar in terms of livelihood improvement and environmental protection and services. Nevertheless, to aid into the condition and improve the symbiotic relation between Hosting Community and Displaced Rohingya Population (DRP), different interventions are taking place. Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) aided by World Bank holds one of the objectives to provide improved communication network for all Upazilas under Cox's Bazar district. Among several components of this project such as preparation of school cum cyclone shelters, facilitating growth centers and RCC Bridge development; road development works are highly significant to ensure all branches of interventions are welded together. Local Government Engineering Department (LGED) as the implementing agency with D&SC (Development Design Consultants Limited-DDC) has identified the key project beneficiary as Displaced Rohingya Population (DRP) and Host Community or in other words, the local population. From many of the project's purposes, identification of environmental and social components which might fall into bargain for improvement works is a fundamental motive. In order to take these matters into consideration, screening and assessment of these elements has been adopted in accordance with guidelines from World Bank; as a result environmental and social screening reports have been produced along with worked out impact factors which are introduced with mitigation and management measures. In order to present a quick picturesque of the proposed sub-project, an overview is given hereunder.

The proposed RCC pavement road in Mirakata, which will be improved under the package of EMCRP/AF/W15, is running through the localities of Modonmia Hazipara, Hayderpara, Miarakata, Kalarmarpara, Moshjidpara and Pillarpara under one identified union named 01 No. Uttar Dhrung Union of Kutubdia Upazila of Cox's Bazar. There are some community property resources, environmental components and other features located within 1km from the sub project, which are detailed out in this report. This road is one of the infrastructural lifelines of Kutubdia Upazila, connecting South Mashjid para on R&H Azam Road and Miarakata area till Wapda Beribandh (embankment), through numerous socio-economic, environmental, and religious establishments and features. A good many smaller connecting roads/branches and alleys harbors at different chainages all along the road, pouring substantial numbers of commuters and passersby into the mainstream. Different types of motorized and non-motorized vehicles and at least 2,500 people pass through the road in a typical day. The area is geographically differentiated between undulating and nearly flat land areas, and substantial forest coverage is present across the areas. An already defined Right of Ways (ROW) all through the road length and present road conditions state that the proposed sub-project is not located within any environmentally sensitive areas (for becoming affected by the interventions) and has no chance to create adverse impacts to important environmental components. The road has got sufficient open spaces on both sides for further widening and strengthening works, wherever required, and there is a very little chance for felling a max. number of 5 trees during the construction period. However, as part of offsetting measures for any potential felling trees and environmental enhancement works in the areas, it is estimated to plant as many as 25 nos. (5 new trees for each felling trees) of trees along the roadside, and sufficient budgeting has been planned for. Several water bodies though are located in the vicinity; water logging is not a regular phenomenon in the area. However, those water bodies may receive dust and chemicals

(including asphalt/bitumen, burnt oil, etc.) primarily during the construction period that can cause huge detrimental impacts on biota and physicochemical characteristics of that compartment. Impacts on air quality during the construction phase may turn to negative as well. In fact, the main impacts include dust generation from crushers, vehicles and the transportation of all types of construction materials. Noise emission from construction machineries and equipment can cause nuisance to local residents, workers and faunal species in the forested lands. Thus, the ambient noise level might have potential to increase temporarily and intermittently in the close vicinity of active construction fronts. The most challenging part during the construction period would be managing traffic efficiently while running the works uninterrupted. Contractors need to pay especial heed on this issue during the construction period.

Not any sensitive environmental, cultural, archaeological, religious sites were found in the area, neither the road passes through any reserved forests/areas. However, as an exception, the presence of Temple, Mosques and some Graveyards in the vicinity should make the contractor more cautious about maintaining all legible or due safeguards measures during the construction period, as it has a great religious, cultural and touristic values.

As stated above, the construction works will generate significant amount of dust and air pollutants, create noise, and have a potential to pollute water resources and may affect several trees. All these impacts are site-specific and manageable by mitigation or offsetting measures. Good management practices in labor camps, material storage areas, borrow pits, and in the areas of occupational health safety, road safety, and hazardous material management would suffice in curbing the potential pollution, hazards and any further risks related to construction works. Appendix 02 of this report has detailed out the mitigation measures within the scope of interventions associated with this sub-project.

This sub-project has been proposed to ameliorate the socio-economic condition of the people living in the surrounding and connecting areas through providing climate resilient roadways and associated safeguard facilities. Since the road will not pass through or affect any sensitive areas of any kind and sufficient numbers of structures are included in proposed implementation works for the enhancement of ecosystem services in the area, and necessary environmental conservative, mitigation and offsetting measures will be adopted with due care and diligence during the construction period, the component should be taken undoubtedly in further consideration for development.

1 INTRODUCTION

1.1 Project Background

An estimated 730,000[1] people of Rohingya community has fled to neighboring Cox's Bazar district of Bangladesh since August 25, 2017 to escape extreme violence in Rakhine State of Myanmar, which caused the total number of Forcibly Displaced Myanmar National (FDMN) in the district to be about 923,033[2]. This huge number of displaced population account for about one-third of the total population of Cox's bazar, a district which was already facing many development challenges and suffering from resource-constrained social service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. Almost all of these displaced people are hosted in Ukhiya and Teknaf Upazila of Cox's Bazar, in extremely congested settlements in areas having very minimal access to basic infrastructure and services and is prone to natural disasters. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities under Cox's Bazar District, to different disasters and improve the social service delivery system and disaster resilience to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change effects.

The project is jointly being implemented by Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE) and Ministry of Disaster Management and Relief (MoDMR) under their respective mandate and scope of works. Apart from the interventions in Addressing Gender and Social Inclusiveness and Preventing Gender Based Violence with the Support from UNFPA and building Communication and Awareness among all affected parties through an effective engagement of BCCP (Bangladesh Center for Communication Programs) in the areas, LGED is implementing a good number of infrastructural facilities, namely construction of drainage structures, rubber dams for irrigation, jetty rehabilitation, climate-resilient primary schools/disaster shelters, and climate-resilient community service centers/disaster shelters, climate-resilient access and evacuation roads and footpaths, construction of firefighting/search and rescue warehouses, as well as installing lightning protection systems, solar street lights, and nano-grids. Given the project interventions, sensitivity of the areas and volume of people in or around the sites, the project is more likely to trigger certain Operational Policies and Bank Procedures, namely Environmental Assessment (OP/BP 4.01), Natural Habitat (OP/BP 4.04), Forest (OP/BP 4.36) and Physical Cultural Resources (OP /BP 4.11).

1.2 Objective of the Sub-Project

In order to uplift the socio-economic condition of the host communities of different Upazilas of Cox's Bazar district along with providing benefits to the associated stakeholders, additional financing to the Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been initiated which will also improve the communication status as such. This project is designed to improve the road communication network of overall Cox's Bazar District and as part of project intervention, improvement of road by RCC pavement in Mirakata from Ch:00-2000m has been planned which is the key to reaching out and opening up new opportunities for Kutubdia Upazila. With the construction of this Upazila road, rural capacity will be transforming rapidly. Wherever the road network comes up the rural economy and quality of life get improved. This scenario makes rural infrastructure in general and rural transport infrastructure in particular an important element in

[1] ISCG: Situation Report Rohingya Refugee Crisis, (September 27, 2018)
[2] IOM Needs and Population Monitoring round 12 as of October 10, 2018

supporting continuing growth of the economy and poverty reduction by providing better access of agricultural input and other relevant services and trading facilities of goods.

The sub-project has the primary target to improve the communication facilities of the area. This intervention, without a doubt facilitates the following: it will

- ✓ Support to rural development along with education, business, agriculture, farming etc.
- ✓ Widen access to the government support system including health, education and emergency evacuation and sheltering
- ✓ Improve the local planning, coordination and work execution capacity
- ✓ Facilitate emergency route in case of emergency situation
- ✓ Decrease road accidents & promote efficient use of existing facilities and increase road traffic safety
- ✓ Make a crucial contribution to economic development and growth and bring important social benefits

This document represents the Findings from Environmental Screening of the sub-project under the package name **'Improvement of road by RCC pavement in Mirakata from Ch:00-2000m in Kutubdia Upazila under Cox's Bazar District'** with the bid package no. **EMCRP/AF/W15**.

Table 1.2.1: Significant features of the Sub-project

<table>
<tr><td colspan="4">Package No. EMCRP/AF/W15
Description of Sub-project: Improvement of road by RCC pavement in Mirakata from Ch:00-2000m (I.D: 422452024) in Kutubdia Upazila under Cox's Bazar District.</td></tr>
<tr><td colspan="4">Sub-Project Location:</td></tr>
<tr><td colspan="4">i. Road ID. 422452024</td></tr>
<tr><td colspan="4">ii. Ward and Union: 7 and 8 No. wards under 1 no. Uttar Dhurong union of Kutubdia Upazila</td></tr>
<tr><td colspan="4">iii. Village: Modonmia Hazipara, Hayderpara, Miarakata, Kalarmarpara, Moshjidpara and Pillarpara</td></tr>
<tr><td colspan="2">iv. Upazila: Kutubdia</td><td colspan="2">v. Sub-Project construction period: 1 year</td></tr>
<tr><td colspan="2">vi. Construction Year: 2022-2023</td><td>vii. Width (m): 4.9
Pavement-3.7m and
Shoulder-1.2m (0.6m+0.6m)</td><td>viii. Length(m): 2000</td></tr>
<tr><td colspan="4">ix. Distance from UZHQ: 8km (Starting point of the Sub-project)</td></tr>
<tr><td rowspan="2">GPS Coordinates</td><td colspan="2">Latitude Value: N-21.8883^0
Longitude Value: E-91.85699^0</td><td>Starting Point</td></tr>
<tr><td colspan="2">Latitude Value: N-21.90213^0
Longitude Value: E-91.84989^0</td><td>Ending Point</td></tr>
<tr><td>Present Condition of Road</td><td colspan="3">RCC (Ch:00m- 121m), HBB (Broken)</td></tr>
<tr><td>Communication Source</td><td colspan="3">Radio & Mobile Networks</td></tr>
<tr><td colspan="4">Subproject interventions:
• 1 vent (2.0mx 2.0m) RCC Box-Culvert at Ch:1000m
• 6 numbers of (1.00mx1.00m) RCC cross drain at Ch:285m, 340m,550m, 1075m, 1675m & 1910m
• Road side drain (30mx2mx0.75m) from Ch:300m-330m(R/S)
• Protective Works (palisading works) at different chainage covering a length of 446 meters on the Left side and 500 meters on the Right Side
• Road safety works and
• Environmental Mitigation and Enhancement works</td></tr>
</table>

Implementing Agency: Local Government Engineering Department (LGED)
Expected construction period: 1 year
Estimated total cost of component: 54,746,123.79 (Tk.)

2 PUBLIC CONSULTATION AND PARTICIPATION

2.1 Methodology

Public participation and community consultation has been taken up as an integral part of environmental assessment process of the project. D&SC conducted consultation meeting on 14 March, 2022 with the presence of Upazila officials, local communities, local drivers' community, local elected representatives, and some other stakeholders, that are exposed in the following Table 2.1.1 as well as refer to Figure 2.1.1, and Public Consultation Participants' List is attached in Appendix-4 and sub-project pictorial overview is attached in Appendix-6. Moreover, religious leaders, businessmen, teachers, students, local individuals of different groups and ages, official from local GO & NGOs, local service providers, among other stakeholders, were participated in those consultation events. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, key interventions, benefits of the proposed components, associated social and environmental aspects, and project Grievance Redress Mechanism (GRM).

Table 2.1.1: Consultation Meetings Details

Package number	Date	Venue	No. of Participants			Remarks (if any)
			Male	Female	Total	
LGED/EMCRP/AF/W15	14/03/2022	Meeting room of the Union Parishad office	27	0	27	The local individuals including female and persons with disabilities, chairman and/or member of Union Parishad, Local drivers, other stakeholders including businessmen, religious leaders, and representatives from different agencies were participated.

Figure 2.1.1: Consultation meeting (FGD) with local community

Public consultation is a living process as type of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution process may differ with time. Thus, consultation with different parties or stakeholders will be continued throughout the sub-project implementation period and records of resolutions, whatsoever and wherever possible, will be kept in writing at the site and made available on any enquiries or requests by all parties concerned.

2.2 Summary of Public Consultation Meeting

In the consultation meeting, environmental issues and their relevant impacts for the infrastructure development works such as road improvement or maintenance were discussed. The advantages and disadvantages regarding the sub-project activities were also revealed. A successful public consultation programme requires the following three elements to be effectively executed (i) dissemination of information to the stakeholders (ii) solicitation of views and information from affected parties and inhabitants on social and environmental issues. (iii) Consultation with interest groups and the public.

D&S Consultants conducted consultation meetings with community people and other relevant stakeholders regarding the sub-project activities. Community representatives have no objection regarding the construction of the sub-project. They have welcomed this as blessings and pointed out that this road would help them improve their socioeconomic condition as a whole. People will have more growth in regards to economic activity which will surely bring development to their localities. They have also suggested increasing the height of the road. They were worried of facing any risks of whether this intervention may cause harm to their establishment of any kind and if their agriculture might be threatened. In reply they were assured that very low impact might accrue but the extent is very negligible. Components such as air quality might deteriorate a bit due to construction induced dust and noise pollution that might occur as well. Discussion was also made on other potential hazards like soil and water pollution, which are very likely to take place during the road construction, if proper measures are not followed.

It has been revealed that this project's scope of works does not intend to overtake their area of lodgment and funding entity has no intention to do so. Moreover, other issues have also been brought to their attention such as proper placement facility for labors and storage facility for materials is a crucial factor. The participants expected that none of the interventions would worsen their living conditions or surrounding environment and they requested for adopting all measures to reduce/avoid the environmental hazards during the implementation phase. Tree cutting might take place for the sub-project but only a few just along the existing road. A compensation method for tree cutting must be in place such as planting five trees for every tree to fall. Participants were also informed of the structure and redressing procedure under project Grievance Redress Mechanism (GRM).

2.3 Suggestions and recommendations of the participants

The significant suggestions that came out during the meeting are given below:

- Slope protection should properly be established on the side of the proposed road at different chainages.
- Best available measures should be adopted to avoid potential negative environmental impacts and enhance positive impacts.
- Participants' suggestions and expectations that came out through the different forms of consultation meetings are taken into consideration to reflect their wishes and minimize the adverse impacts of construction works.
- Steps should be taken for minimizing the air pollution by spraying water at the construction sites.
- Road must be disability inclusive. Footpaths/walkways of the road must be designed in a way that wheelchairs can move smoothly.
- Noise pollution should be effectively minimized to a tolerable limit and all construction works must be limited to the day time only.
- Works will be conducted in phase wise maintaining alternative schedule, so that neither the passage of commuters and passersby nor the construction works are hampered, though a temporary traffic congestion may occur from time to time and local residents are expected to extend every support to keep the work progress smooth and uninterrupted as they promised in the meetings.
- Every possible measure should be taken to avoid any nuisance to public and surrounding inhabitants.

3 ENVIRONMENTAL SCREENING

3.1 General

This section identifies the potential impacts that the various elements of the proposed Project may have on the physical, biological and socio-economic environment within half a kilometer of the radial distance around the site. Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted to identify and determine which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation measures.

In order to realize the exact physical, biological and socio-economic environment of the proposed sub-project site and the influence area in regards to the implementation measures Environmental

Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered and this will help identifying the impacts and their extents. The screening data and information for this Sub-project component and details screening summary have been formulated and shown in Appendix-1.

3.2 Major Findings

The proposed RCC pavement road in Mirakata, which will be improved under this package, is running through the localities of Modonmia Hazipara, Hayderpara, Miarakata, Kalarmarpara, Moshjidpara and Pillarpara under one identified union named 1 number Uttar Dhrung Union of kutubdia Upazila of Cox's Bazar and also through numerous socio-economic, environmental, and religious establishments and features. A good many smaller connecting roads/branches and alleys harbors at different chinages all along the road, pouring substantial numbers of commuters and passersby into the mainstream. Different types motorized and non-motorized vehicles and at least 2,500 people pass through the road in a typical day. The area is geographically differentiated but mostly flat land areas, and substantial homestead forest coverage is present across the areas. An already defined Right of Ways (ROW) all through the road length and present road conditions state that the proposed sub-project is not located within any environmentally sensitive areas (for becoming affected by the interventions) and has no chance to create adverse impacts to important environmental components. The road has got sufficient open spaces on both sides for further improvement works, wherever required, and there is very little chance for felling of trees. However, a maximum number of 5 trees are estimated to be cleared out during the construction period, if any unexpected circumstance arises. However, as part of offsetting measures for any potential felling trees and environmental enhancement works in the areas, 25 nos. of trees will be planted along the roadside, and sufficient budgeting has been planned for. Impacts on air quality during the construction phase may turn to negative. In fact, the main impacts include dust generation from crushers, vehicles and the transportation of all types of construction materials. Noise emission from construction machineries and equipment can cause nuisance to local residents, workers and faunal species in the forested lands. Thus, the ambient noise level might have potential to increase temporarily and intermittently in the close vicinity of active construction fronts. The most challenging part during the construction period would be managing traffic efficiently while running the works uninterrupted. Contractors need to pay especial heed on this issue during the construction period.

During the survey conducted by the D&S safeguards team, many different features have been identified. Among those different socio-economic and environmental features within half a kilometer from the centerline of the proposed road, major features in terms of having potential sensitivity to receive any impacts and having closer proximity to the road length are tabulated hereunder.

Table 3.2.1: Major sensitive/important features along the road length and potential impacts (if any) from the subproject activities

Chainage	Features	Distance from the road center line	Direction/ Orientation	Key Potential impacts
2000m	WAPDA Embankment	5m	North side	A little noise and dust impact

Chainage	Features	Distance from the road center line	Direction/ Orientation	Key Potential impacts
(From ending point of the proposed site)	(Veribandh)			may occur during construction period.
	Bay of Bengal	15m		
000m (From Starting point of the proposed site)	Salt fields	15m	South side	Dust and noise pollution may impose some impacts, especially during construction period. Pollution from bituminous chemical and oils may pose serious threats.
	Nayapara mosque	300m		No significant Impact is anticipated due to sufficient distance in between.
	Moulavipara graveyard	400m		
	Darus Salam Model Girl's Madrasah	400m		
	Durga mondir	450m		
	Dhurong Bazar	500m		
	Dhurong Adarsha School & College	500m		
	Dhurong Bazar central mosque	500m		
81m	Crop fields	10m	R	May be impacted due to dust & noise pollution during construction period
128m	Salt fields	10m	L	
221m	Shop	5m	L	
285m	Vegetables yard	5m	L	
300m	Shop	5m	L/R	
371m	Kalarmar mosque	150m	R	No significant Impact is anticipated due to sufficient distance in between.
400m	Dhurong Somodia Alim Madrasah	150m	R	
410m	Somodia GPS	180m	R	
429m	Uttar Dhurong UP	300m	R	
545m	Uttar Mosjidpara graveyard	150m	R	
610m	Furarpara graveyard	300m	L	
735m	Dakkhin Kalarmarpara khal	5m	L/R	May be impacted due to dust & noise pollution during construction period
800m	Madan Miyazipara pond	5m	L	
950m	Salt field	7m	R	
995m	Madan Miyazipara graveyard	10m	L	
1005m	Kalamarpara graveyard	130m	R	No significant Impact is anticipated due to sufficient

Chainage	Features	Distance from the road center line	Direction/ Orientation	Key Potential impacts
1210m	Hyderpara graveyard	50	L	distance in between.
1230m	Hyderpara mosque	500m	L	
1325m	Poschim Dhurong GPS	150m	L	
1350m	Miarakata mosque	400m	L	
1475m	Pillarpara graveyard	150m	R	
1490m	Bay of Bengal	450m	L	
1508m	Pillarpara mosque	150m	R	
1520m	Pillarpara khal	5m	L/R	May be impacted due to dust & noise pollution during construction period
1600m	Tubewell	5m	R	
1626m	Crop field	5m	L	
1687m	Shop	5m	L	

As tabulated above, some features may face dust and noise pollution due to having a closer proximity to the road but the impacts are short-term, site-specific within a relatively small area and reversible/ preventable by mitigation or conservative measures. Other features are located at places having sufficient distances from the road length; therefore significant disturbances to all these establishments/features are not anticipated, specifically from the construction activities. Pollution from bituminous chemical and oils may pose serious threats to soil and water bodies. However, strict construction site management system including restrictive work schedule during the daytime only, water-sprinkling twice a day on and around the site, proper fencing around the working area, safe storage of materials, etc.- all these measures will be complied fully in the field. Construction equipment may generate vibration at the properties immediately adjacent to the road alignment. Any vibration would result in nuisance effects to nearby faunal species, but will be localized and temporary and will unlikely to result in structural damages to buildings or walls of the adjacent private properties. During the construction period, soil may get contaminated from activities such as handling of hazardous construction materials such as fuel, lubricants, paints, and solid waste and sewage. Since the road is fully functional even at this deteriorating condition, managing traffic and ensuring community safety during the construction period would the topmost challenges, in terms of potential or foreseeable impacts.

In order to offset the loss or attenuating the environmental degradation and ensuring community safety, a set of mitigation/management measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

3.3 Climate Change Impact

3.3.1 General Consideration

Cox's Bazar is one of the coastal districts of Bangladesh and is prone to the effects of climate change due to its geomorphological siting and climate induced effects. The hilly tracts of Cox's Bazar could foster further environmental crisis brought on by indiscriminate deforestation and diminishing

groundwater reservoirs, which have been taken place in recent months as the Rohingya crisis evolved. A recent study conducted by World Bank[3] has found that Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, by 2050, if greenhouse gas emissions continue unabated.

The hilly region of the country, especially the part in Cox's Bazar is characteristically of muddy or soil structure, not of any rocky formation and the stability comes from the roots of the trees. Denudation of trees from hilltops in order for the huge settlement of Rohingya people has already increased the vulnerability to the risk of hill collapse by destabilizing the terrain. Also, the vigorous monsoons make the area prone to landslides, and there is always the lurking threat of cyclones and thunderstorm across the area.

Together with the above mentioned hazardous situation, availability of potable water from shallow tube wells that pump water up from about 150 feet has already reached to a critical level. Averting the problem requires new tube wells to be plumbing deeper into the poorly mapped aquifer, but going deeper than 700 feet in some places may cause salt water to contaminate freshwater resources, which could be disastrous for both refugees and local residents.

Considering the general climate change effects in Cox's Bazar area and offsetting the aggravating environmental situation due to the mass arrival of Rohingya communities, several specific measures including tree planation in sub-project areas and construction of drainage facilities in optimum numbers with wide opening, along the road length have been suggested and will be implemented under this project.

3.3.2 Site Specific Consideration

The sub-project area is not adjacent to the sea. The cyclone has higher impact in the area and intensity of precipitation has been seen to have increased in the past few years. Salinity and the occurrence of cyclonic storm surge were not reported in the vicinity of the subproject. Temperature was reported to be increased and Thunder storm is found to have highest impact in the area. Thunder storm has been observed creating more damage than before but no casualty was reported. Flash flood in or around the site is not observed; but the area experiences water logging issues during the monsoon, which for several structures have been suggested to include in the design.

Site specific climate change impacts are often not so easy to measure or deduce plausibly while the site is confined to a narrow strip of roadways only, and associated mitigation or offsetting measures are really hard to plot on the same tiny impact areas, though an overall set of measures are often considered in practical aspect. Tree planation on the road slope is suggested to sooth the temperature effect and increase the water retaining capacity of soil, at the same time.

4 ENVIRONMENTAL AND SOCIAL PROTECTION/SAFEGUARDS

4.1 Mitigation and Management Measures

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would be largely construction-related, and could be addressed through adoption of good

[3] https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf

engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

The proposed road is on plain low-lying land, though there are some undulating land surfaces present across the areas. Primarily it is anticipated that only 5 numbers of trees may need to be cut down for road improvement, and as a mitigation measure, 5 nos. trees will be planted for each tree fell in the periphery of the subproject. There are some important socio-cultural and religious and educational establishments/features along the road length, which might face construction induced impacts to some extent.

Further, some settlements located adjacent to the sub-project area might get affected during the construction period with the generated debris and dust, though for the time being. Contractor must adhere to the best practice debris management procedure and regular adoption of dust control measures (spraying of water at least twice a day) to minimize the effect to the level best. Proposed subproject area experiences water logging problem during the monsoon sometimes. Also, there are some patches of agricultural lands (mostly salt cultivation), in the area, which needs regular supply of irrigation water. In order to averting the waterlogging problem and facilitating optimum irrigation, 1 vent (2.0mx 2.0m) RCC Box-Culvert at Ch:1000m; 6 numbers of (1.00mx1.00m) RCC cross drain at Ch:285m, 340m,550m, 1075m, 1675m & 1910m; Road side drain (30mx2mx0.75m) from Ch:300m-330m(R/S). Protective Works (palisading works) at different chainage covering a length of 446 meters on the left side and 500 meters on the right side due to the presence of low-lying land along different chainage of the road will be constructed at the subproject area.

As traffic and community safety may pose a serious concern during the construction period, the contractor should draw up a comprehensive traffic management plan. It is anticipated from previous experiences in the construction works of such longer roads under LGED, contractor would implement the entire road works in different phases with partly closure of a road section at a time leaving another part open for vehicle-pedestrian movements, and place cautionary notices on both sides, delineators & barricades around the working area, and engage flagmen to control traffic. In order to minimize the risks of fire hazards or small fire incidents during the construction period, appropriate type of fire extinguishers shall be kept at site office. Contractor's staffs and workers will be given training on good practice construction works, health safety, fire/hazard safety and efficient camp management, and relevant awareness building sessions will also be conducted, and records of all those training and awareness building sessions will be kept on-site as part of effective management and monitoring of safeguard works. For ensuring community safety in terms of road safety at operational period, contractor must adjust sufficient spaces and slopes at bending (as per design), place proper road signing and signaling, necessary bumping and speed breakers at strategic places, and other relevant measures. Further construction related activities which may result in adverse impacts in the surrounding environment of the sub project must be kept under close consideration and appropriate mitigation and management measures will be taken with due care and vigilance. Once the effects are minimized to its least level and controlled efficiently, it will turn into a welcoming and beneficial project for the local communities.

The subproject specific Environmental and Social Management Plan has been outlined in Appendix-2. The mitigation measures as well as monitoring program of ESMP have also been incorporated in the management plan.

Environmental quality enhancement: Under the additional financing to the EMCRP project, Forest Department of the Government of Bangladesh will afforest along 200 km of road length area, in different parts of the Cox's Bazar district in order to balance the environmental and ecological devastation that had been occurred due to the evolution of Rohingya Crisis, to an achievable level. Though Kutubdia Upazila is not hosting any cluster of displaced Rohingya people, this particular road is more likely to receive a significant number of trees to be planted along the road length, under that afforestation program as part of offsetting measures across the district. Local Government Engineering Department (LGED) will allocate and channelize the finance to the Forest Department under the said additional financing component and oversee the progress of works with due diligence. However, this enhancement work will improve the environmental quality of the area and reinstate some parts of the ecosystem services to those areas, though primarily.

4.2 Health and Safety Measures under COVID situation

Apart from the established Occupational Health and Safety (OHS) measures being followed in construction sites, offices, and labor camps, a set of additional measures has to be taken and practiced throughout the daily cycle by each labor, staff and any involved parties, due to the ongoing pandemic coronavirus situation. Staffs and consultants at PIU and D&S, along with the pool of consultants under different firms/agencies for different services, and all the representatives or staffs of construction contractors and suppliers have to play much sensitive, (pro-) active and responsible roles in abiding by the rules and measures by themselves and getting the involved workers and different stakeholders adhered to the same. A detailed guideline containing a set of measures with shared responsibilities has been sketched out in order to fight the exposure and further spread of this potentially fatal situation. This plan or guideline shall constitute an integral part of ESMP measures for every sub-project, though is not included in this report to keep it concise and specific, and the contractor is required to keep the copy of that guideline at every site offices.

However, among many other relevant issues, the guidelines emphasize on following line of directives:

a. Contractor must designate one of his employees as H&S/Safeguards supervisor to lead, coordinate and interface in order to fight the COVID 19 situation under the direct guidance of COVID focal at PIU of EMCRP project.
b. All workers, supervising and supporting engineers and staffs, consultants, service providers and other concerned parties must adhere to the personal health and hygiene rules, social distancing, and other protective measures in full in order to protect themselves and contain the infections any further. Necessary training and awareness campaign will be aligned with the specific sub-project scenario and prevailing conditions.
c. General practice of cleaning and hygiene has to be maintained in all project/site offices and camp sites, and supply of necessary PPEs and cleaning /disinfecting materials along with proper use of those is to be ensured.
d. Public consultation and stakeholder engagement is to be carried out considering the prevailing risks of virus transmission in the target areas, scope of interventions and level of ICT penetrations among the target stakeholders, and so on.
e. Necessary protocols has to be established and maintained in case of handling a sick employee or worker, and appropriate compensation to a sick disengaged labor is required to be given with due documentation.

f. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

Following the additional health and safety measures presented in that guideline, sub-project specific BOQ items have been inserted to supplement the budget considering the country-specific situation, capacities, and scope of interventions. The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3.

4.3 Cost of Environmental Enhancement Works in BOQ

In consideration to the above-mentioned environmental impacts and their mitigation measures for this sub-project component, a set of items are included in the BOQ of this sub-project. Social Safeguard Personnel for Environmental and Social Management for Work Package EMCRP/AF/W15 have also been added in the whole BOQ in order to take supervision and leadership to organize Environmental Management issues/events under Environmental Enhancement Works. The total costing and estimation have included enhancements such as Grass turfing plans, Tree plantation initiatives, Dust Suppression mechanisms. On the other hand, in order to ensure health safety and sanitary measures of workers PPE, First Aid Box, Labor shed, Environmental management, drinking water facility with water tests, Temporary latrine for male and female as well as waste disposal systems has been accounted for. Ensuring sustainable labor performance in regards to environmental and social considerations motivational training has been taken into account. An overview of the estimation is given in Appendix-3.

5 MONITORING MECHANISM FOR ESMP IMPLEMENTATION

Monitoring, as such, is required to ensure that the mitigation and enhancement measures are being properly implemented and at the same time, to determine whether the benefits of these measures are being realized over time. A comprehensive monitoring framework is suggested in Project ESMF and the responsibilities lie on all the responsible parties or institutions directly involved with or oversee the construction works.

There will be several tiers in monitoring framework to ensure the proper implementation of ESMP. Contractors, throughout the construction or implementation period, must ensure that environmental and social risks and impacts are minimized effectively while working at sites and adequate health and safety measures are put in place not only for their workers but also for the surrounding communities. Contractors' employed site managers and safeguard supervisors (or persons with similar responsibilities) shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to the properties belong to public and private individuals/entities or to different features and establishments, from pollution, noise or other detrimental causes arising as a consequence of different methods of operation and activities. The said employees shall instruct as well as supervise the day-to-day progress of ESMP implementation activities on contractors' behalf. Apart from the ESMP implementation, some specific management plans, e.g., drainage management, traffic management, emergency preparedness and response, etc., whichever required, need to be prepared by the Contractor and strong supervision for the implementation of those plans is also a part of the said employees' responsibilities.

Design and supervision consultants shall stand at the first tier of the monitoring mechanism. When the contractors are mobilized in the field, safeguards consultants from D&SC firm and the Resident Engineer will ensure that contractors are adherent with every suggestive measure delineated in ESMP, on top of the best engineering practices at sites including Occupational Health and Safety (OHS). D&SC firm will prepare regular monitoring reports based on the findings of stringent supervision and monitoring on its part.

PIU will have safeguards specialists stationed in Cox's Bazar and will conduct field visits very frequently. Moreover, Executive Engineer's office in Cox's Bazar and Upazila Engineer's office in Kutubdia will play a vital role in upholding the proper monitoring and supervision of civil works and associated project activities, including social and environmental safeguards in and around the sub-project sites. Safeguards specialists of PIU will monitor that all staffs of the contractors and other counterparts who are involved in project implementation receive both initial and ongoing environmental and social safeguard awareness and training sufficient to ensure the best practices in the field. Local Engineers from LGED and PIU safeguards specialists shall ascertain that contractors cleaning and reclamation works after the decommissioning of sites/ end of construction works are perfectly done and will also suggest for punitive measures against the contractors if any negligence or indifference is found in following the ESMP to the fullest effectiveness.

The highest tier in the monitoring system is bestowed upon the respective Ministerial Project Steering Committee (PSC) chaired by the Sr. Secretary/Secretary, LGD, MoLGRD&C. The PIU, in collaboration with the PSC, will also ensure that Environmental and social safeguards training are provided to all Project personnel.

Widespread COVID 19 situations prevailing across the country has put further intense necessity for all concerned parties to scale up their monitoring frequency and activities in line with the prescribed guidelines to be followed in the field, camp site, and project offices. Frequent and abrupt visit to the working sites and labor camps is quite necessary in this crisis period and is strongly suggested.

6 LIMITATIONS OF THIS STUDY

We know that the whole world has been facing an unprecedented situation due to the devastation being caused by COVID-19, and Bangladesh is facing the same. Economic activities became limited and restrictions were imposed on movement and activities several times during the last one and a half year of infliction. The government has recently lifted the restrictions on public movement and activities from 11 August 2021, with reminding the authorities to make sure that people wear face coverings, maintain distances and follow other health safety guidelines when they are outdoors. Government has directed the local government division, information ministry, religious affairs ministry, health service division and district and upazila administrations to hold public awareness campaigns to stem the spread of the lethal virus. Besides, the Government has started mass vaccination along with Booster dose program in full swing as part of the effort to reduce human losses and revive the economy of the country, which has been shattered heavily for the discontinued economic activities in last one and a half years.

This new-normal situation is still limiting the movement of consultants and supervising staffs to the proposed working sites for undertaking the screening survey along with conducting effective

consultation meetings, which is in turn affecting the overall progress of the project and there might have a likely chance to remain the gaps in overall screening process and outcomes.

7 CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that if the mitigation, compensation and enhancement measures are implemented in full, there will be no significant negative environmental impacts in regards to the selection of location, design, construction, and/or operation procedure of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in quality of life, opportunities in business, trading and jobs and ensuring social safety and security will be achieved once the scheme is in operation.

The conclusions of the Screening study can be summarized as follows:

- The communities will receive large benefits through improved infrastructural facilities, transportation & communication etc.
- The short-term negative impacts that may come by the way of air quality, noise, solid waste, occupational health & safety need to be minimized through the management plan.
- The project will create employment for those who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development, if necessary for the road site, with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental and Social Management Plan (ESMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject activities.

Implementation of this Sub-project will have large positive impacts to the communities in terms of improved infrastructural transportation & communication facilities, which would eventually develop the socio-economic condition of the catchment areas. So, strong recommendation should be put in place to implement the sub-project within shortest possible period of time, and with great care and efficiency.

Appendix-1: Filled in Environmental Screening Form

Environmental Screening Form

Sub-Project Description Form:

Name of Sub-Project: (**Improvement of road by RCC pavement in Mirakata from Ch:00-2000m in Kutubdia Upazila under Cox's Bazar District;** EMCRP/AF/W15).

Name of the component: Improvement of road by RCC pavement in Mirakata from Ch:00-2000m in Kutubdia Upazila under Cox's Bazar District (ID: 422452024).

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

Estimated total cost of the component (in Taka): 54,746,123.79 **Tk.**

Estimated construction period duration: 1 year

Estimated Operation and Maintenance period (life of sub-project): Project design life is more than 15 (Fifteen) years but Government policies will determine the period for sub-projects to operate in the areas.

District: Cox's Bazar **Sub-District**: Kutubdia **Union**: 1 no. Uttar Dhurong

Name of Community/Local Area: Modonmia Hazipara, Hayderpara, Miarakata, Kalarmarpara, Moshjidpara and Pillarpara

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): The Sub-Project is categorized as a village road type-A with a proposed design of RCC from Ch.00 to Ch. 2000m. Proposed safety and service providing structures include 1 vent (2.0mx 2.0m) RCC Box-Culvert at Ch:1000m 6 numbers of (1.00mx1.00m) RCC cross drain at Ch:285m, 340m,550m, 1075m, 1675m & 1910m; Road side drain (30mx2mx0.75m) from Ch:300m-330m(R/S). Protective Works (palisading works) at different chainage covering a length of 446 meters on the Left side and 500 meters on the Right Side which are included in the design and estimation.

Estimated footprint / land area for this sub-project is 9,800 sq m.

Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.:

This proposed Mirakata Road belongs to 1no. Uttar Dhurong union of Kutubdia Upazila. This road has started from South Mashjidpara point at 8 No. Ward of Uttar Dhurong on R&H Azam road at south side of Kutubdia Upazila stretching 2000m to Miarakata at north-west side on WAPDA Beribandh at 7 No. Ward of Uttar Dhurung union.

Several house connecting roads fall within the road chainage. This targeted sub-project passes through boundary fences, electric poles, khals, ponds, culverts, ditches, patches of vegetation and agricultural fields, bushes, homestead gardens, mosques, graveyards, schools, religious institutes, shops, bazars, open field etc. No significant environmental or socioeconomic features are anticipated near the road component.

However, detail Environmental features within 100m of the both sides of the road from the center line were collected @300m longitudinal intervals during the survey and the findings are given in the table below:

Chainage (m)	Left	Right	Features
000-300	L		Ponds, Electric poles, trees, tin shed fences, households, bamboo fences, salt fields, shop, vegetables yard, household connecting road
		R	Trees, ponds, crop field, bamboo fences, household connecting roads, electric poles, existing u-drain
300-600	L		Shops, households, household connecting roads, crop fields, electric poles, trees, ponds, bamboo fences, tin shed fences
		R	Crop fields, electric poles, mosque, madrasah, ponds, household connecting roads
600-900	L		Pond, tin shed fences, households, electric poles, crop field
		R	Crop fields, electric poles, bamboo fences, salt field
900-1200	L		Crop fields, bamboo fences, trees, ponds, school, shop, households
		R	Salt field, existing x-drain, bamboo fences, trees, households, crop fields
1200-1500	L		Existing x-drain, khal
		R	Electric pole, household connecting road, bamboo fences, pond
1500-1800	L		Electric pole, crop fields, bamboo fences, ponds, trees, shop, existing palisading wall, ponds, tin shed fences
		R	Electric pole, crop fields, vegetables yard, tin shed fences, households, trees, bamboo fences
1800-2000	L		Crop fields, pond, tin shed fences, bamboo fences, household
		R	Bamboo fences, trees, tin shed fences, households

Figure: Starting point of Mirakata road

Overall Comments

The proposed component of the sub-project (Road improvement) is not located within any remarkable environmentally sensitive or reserved area of any kind and will not cause any severe affect to the environmental settings of the area, thus not going to create intimidation to important environmental features. No drainage congestion/water logging has been observed in the road area, though local people pointed out about the problem with waterlogging at some sections along the road length during the rainy season. Since the road has already defined Right of Way (ROW), very few numbers (not more than five) of trees may need to clear out during the construction period, with appropriate offsetting measures to be taken. Provisions for additional numbers of trees to be planted along the road length are kept in planning and budgeting as part of enhancement works. No agricultural productive soil will be used for this improvement works. In order to minimize the risk of potential sliding or slipping of soil mass, earth will be compacted for stabilization and necessary cut and fill operation along the hill slope is to be ensured. All these inputs will be mainly at construction phase and limited within project boundary. Further mitigation measures will be taken according to the ESMP for minimizing the air, dust and noise pollution.

It has been revealed during the consultation session with local stakeholders that this project's scope of works does not intend to overtake any area of physical lodgment and funding entity has no intention to do so. Some other issues have also been brought to their attention including construction of drainage and protective structures at different chainages on the road.

Local people of the subproject area are very much optimistic about the success of the project and are also eager to participate in the project activities. They truly appreciated the initiative as they will have very good access to all the services and facilities provided by the government and different organizations, and they would be able to harness the full socio-economic benefits as well as will have an interrupted passage during an emergency situation. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub project component.

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

During construction period solid waste will be generated due to construction activities. The types of wastes are brick pit, unused sand, steel, wood, gravels etc. Negligible amount of plastic, fuel etc. will be generated in equipment/stack yards. Human wastes will be generated in labor camps. Dust and noise are among the nuisance that may generate during the operation phase.

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

Within the influence area of the subproject no historical sites were identified. There are some community properties, environmental-religious-and-sociocultural components located within 1km from the sub project, which are quoted here. This list is not exhaustive, but includes prime features and distances given in parenthesis are from the centerline of the road at different chainages. At **north side** there is shoreline of the Bay of Bengal. On **south side** are Noyapara Mosque (300m), Durung Bazar (500m), salt field (15m), Moulovipara graveyard (400m), Durung Adarsha School and College (500m), Durung Bazar Central Mosque (500m), Durus Salam Kalima Madrassa(400m), Durgo Mondir/Temple (450m). on **east side** are Kalarmar Mosque (150m), Domodia Alim Madrassa (150m), Domodia GPS (180m), uttor Durung UP (300m), North Mosque para (15m), South Kalarmarpara Khal (5m), Kalarmarpara Graveyard(5m), Pillarpara Mosque(150m), Pillarpara Khal(110m), Pillarpara Graveyard (150m). On **west side** Wapda beribandh (440m), Shoreline of Bay of Bengal (450m), Haydarpara Jame Mosque (500m), Miarakata Jame Mosque (400m), east during GPS (150m), Hayderpara Graveyard (50m), Modon Miajipara Graveyard (10m), modon Miyajipara Pond (5m), Purarpara Graveyard (300m) are located. The project road crosses through several communities, agricultural lands and community level forests. No scope of or very least disturbance to these components is anticipated by the sub-project activities. In this sub-project area, no elephant migration routes exist (ref. IUCN).

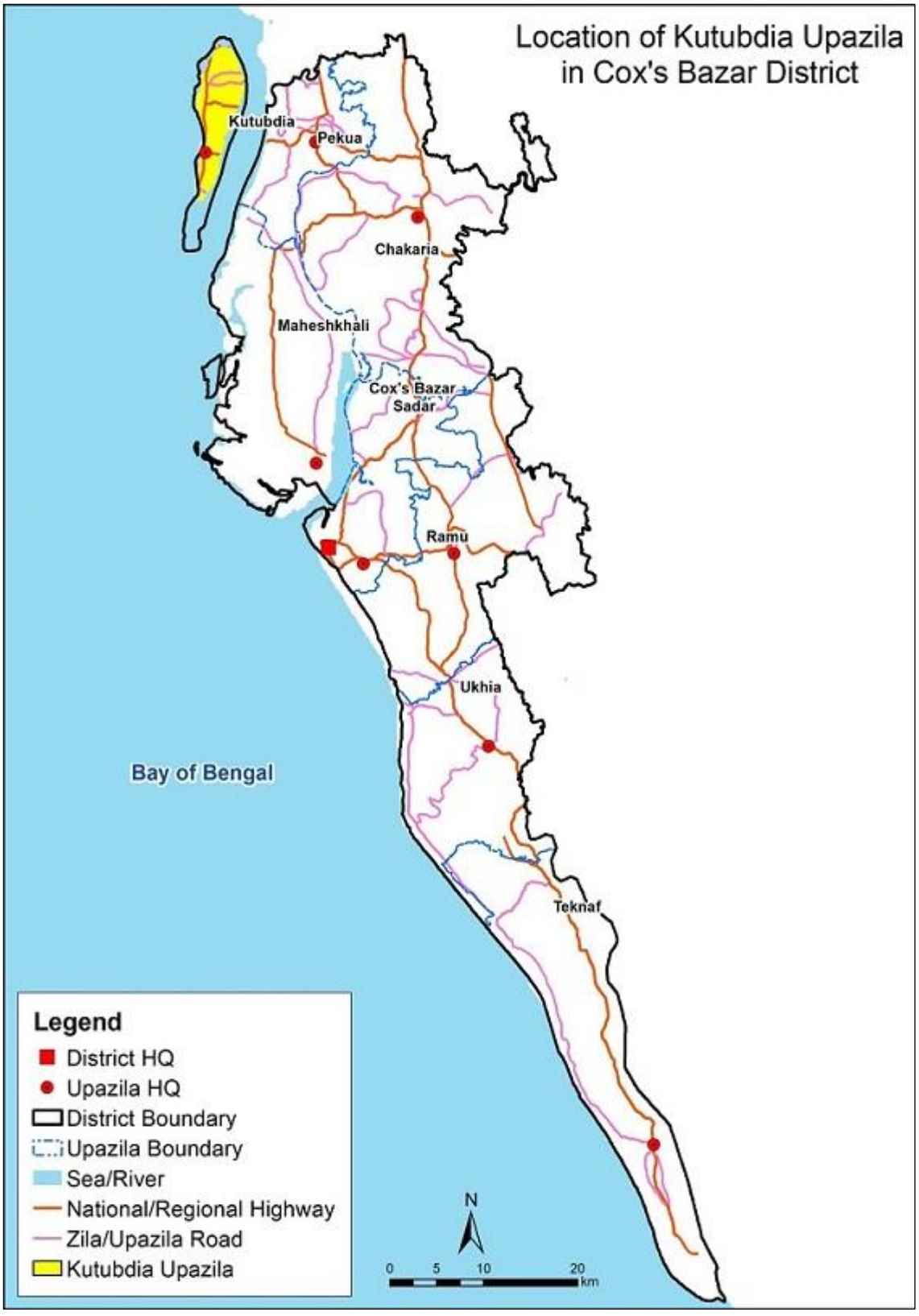

Figure 3: District Map with project location

Figure 4: Upazila Map with Sub-project location

Section A: Sub-Project Overview

Description of sub-project/component interventions:

The Sub-Project is categorized as a Upazila road with a proposed design of RCC from Ch.00 to Ch. 2000m. Proposed safety and service providing structures include 1 vent (2.0mx 2.0m) RCC Box-Culvert at Ch:1000m 6 numbers of (1.00mx1.00m) RCC cross drain at Ch:285m, 340m,550m, 1075m, 1675m & 1910m; Road side drain (30mx2mx0.75m) from Ch:300m-330m(R/S). Protective Works (palisading works) at different chainage covering a length of 446 meters on the Left side and 500 meters on the Right Side which are included in the design and estimation. Moreover, as part of road safety works barricades, speed bumps, warning signs/lights, guide signs, flagmen etc. and Environmental Mitigation and Enhancement works are included in the estimation.

Sub-project Location:

Important Features	
Road ID	422452024
District	Cox's Bazar
Upazila	Kutubdia
Union	1 No. Uttar Dhurung
WARD	07 and 08
Proposed length	2000m
Road Type	Village road type-A
Proposed Intervention Type	RCC
Road Starting Point Coordinates	Latitude Value: 21.8883^0N; Longitude Value: 91.85699^0E
Road Ending Point Coordinates	Latitude Value: 21.90213^0N; Longitude Value: 91.84989^0 E

Land ownership

Land area covering the road length is owned by the Government.

Expected construction period: 1 Year

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

The Sub-Project is categorized as a village road type-A with a proposed design of RCC from Ch.00 to Ch. 2000m.

i) Some water bodies like ponds, khals, ditches etc. were identified during visiting time.
ii) No historical sites were identified, but several temples, mosques, graveyards, and educational institutes were present in the vicinity.
iii) Not required to relocate local community.
iv) Some small trees, bushes may be affected, large mature trees are very less likely to cut down for further widening of roads or slope works/strengthening.
v) No chance to lose of agricultural land.
vi) Some Household Boundary made of bamboo and tin may need adjustments.
vii) Environmental Sensitivity: Ponds and patches of vegetation coverage are located within very close proximity along the road length, which may contain rich bio/ecological niches that will be affected by road construction activities. Also, there are several rivers and

	canals in the vicinity which are located sufficiently distant from the site and are more likely to be free from any direct risks and impacts from the development works. No elephant corridor was identified in the areas. Construction induced impacts may affect numbers of socio-economic and environmental features along the road length; therefore, a well-planned ESMP has been prepared to follow in the field.

Section B: Environmental Screening

***B.1*: Environmental feature of sub-project location**

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

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

There are some community properties, environmental-religious-and-sociocultural components located within 1km from the sub project, at **north side** there is shoreline of the Bay of Bengal. On **south side** are Noyapara Mosque (300m), Durung Bazar (500m), salt field (15m), Moulovipara graveyard (400m), Durung Adarsha School and College (500m), Durung Bazar Central Mosque (500m), Durus Salam Kalima Madrassa(400m), Durgo Mondir/Temple (450m). on **east side** are Kalarmar Mosque (150m), Domodia Alim Madrassa (150m), Domodia GPS (180m), uttor Durung UP (300m), North Mosque para (15m), South Kalarmarpara Khal (5m), Kalarmarpara Graveyard(5m), Pillarpara Mosque(150m), Pillarpara Khal(110m), Pillarpara Graveyard (150m). On **west side** Wapda beribandh (440m), Shoreline of Bay of Bengal (450m), Haydarpara Jame Mosque (500m), Miarakata Jame Mosque (400m), east during GPS (150m), Hayderpara Graveyard (50m), Modon Miajipara Graveyard (10m), modon Miyajipara Pond (5m), Purarpara Graveyard (300m) are located.

Besides these components, no other sensitive environmental, cultural, archaeological sites including elephant migration routes were identified. The area is adequately forested though not along the roadside; homestead gardening and backyard and social forestation also was found gaining popularity in the area.

A sketch of the project surrounding area with several features at relatively distant places and locations of sensitive institutions in the project surrounding areas are shown in figure B.1.1

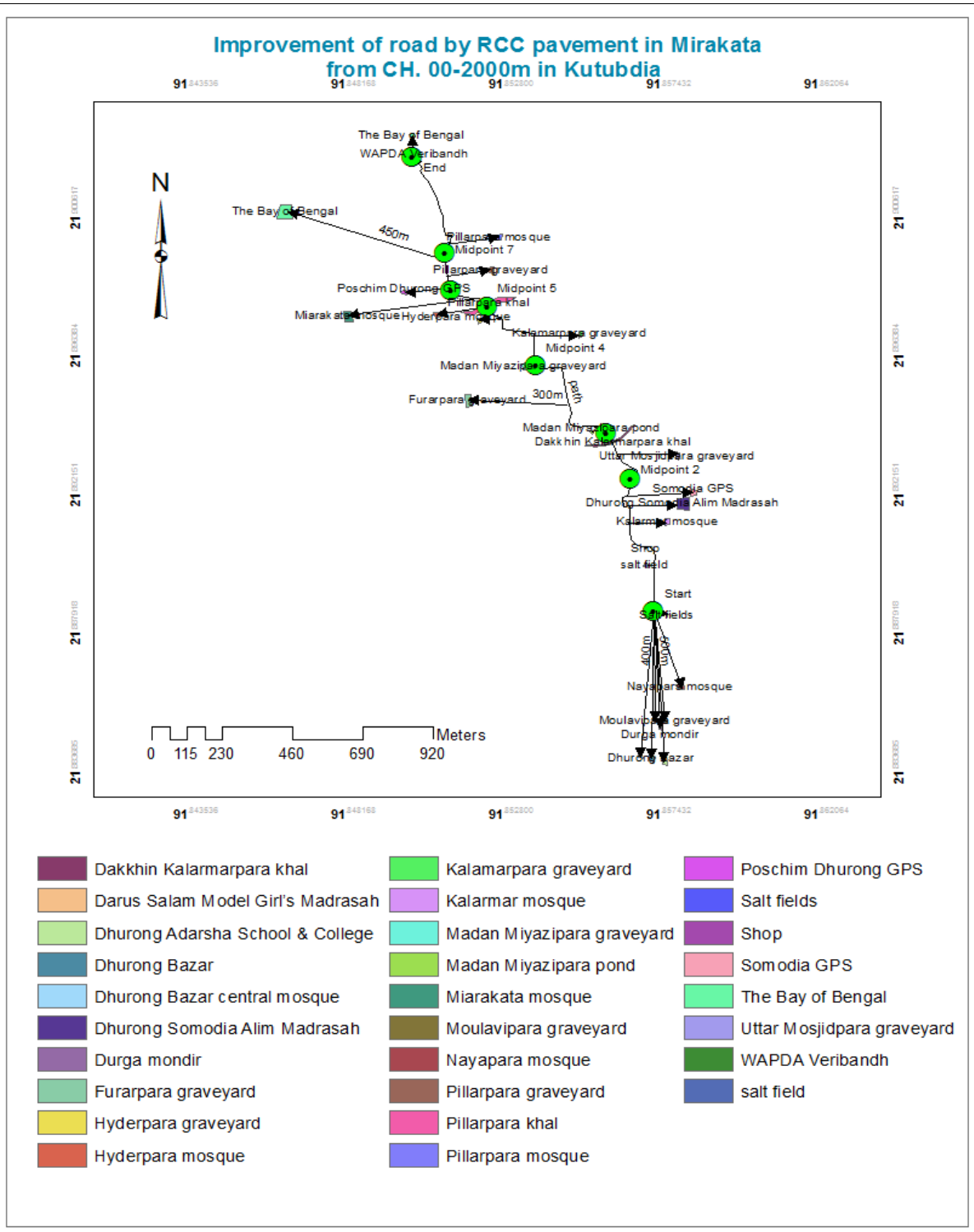

Figure B.1.1: A sketch of the project intervention area with major features

Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation and some moderate hill of forest department around the site. Several mosques, madrasah, graveyards, school and human settlement were found during the survey. It will not be affected by the construction works, as the activities will be carried out throughout an existing alignment and be limited within a designated Right of Ways (ROW), and necessary preventive and

mitigation measures will be followed during the entire construction period. **(1) Within/near Elephant Migration Routes Yes/No*** No. There is no existence of Elephant corridor/ route now, which has been checked on the basis of elephant migration route map, established by UNHCR/IUCN (latest updated maps as of 22 February 2018 and later June 05, 2018) and was further confirmed by the stakeholders presented in the consultation meeting. **(2) Potential impacts on remaining forests in/around camps Yes/No** N/A (This activity will be confined within an existing subproject boundary) *This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN
Baseline air quality and noise levels: Ascertaining distinctively the baseline air and noise quality level in respect to any sites at different parts of Cox's Bazar district is nearly impossible because of the huge burden of physical developmental works including roads, bridges, culverts, building structures, markets, jetties, etc. being carried out simultaneously across the areas. Therefore, the apparent baseline of the pre-development period can only be anticipated and results of visual observation are worth to be presented here. **Dust:** Ambient air quality data was not readily available, but quality is apparently good due to the appearance of rural vegetative settings around. Dust is slightly generated through movement of pedestrians. Natural air action over the road surface is very prevailing in the area which causes dust circulation. **Noise:** Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. Vehicles such as tempo, auto rickshaw, tractor, trailer, etc. move on roads adjacent to sub-project throughout the day and night generate noise but within tolerable limit in most cases.
Baseline soil quality: The Sub-project area is located mainly on red, alluvial, muddy and sandy soil. The soil developing from the weathered sandstones tend to be sandy to clay loams. Presence of Organic matter content in the soil is moderate.
Landslide potential (high/medium/low, with explanation): Landslide potential is low. There is low possibility of soil erosion or landslide during construction period of targeted sub-project. The impacts are negative but very small scale, site-specific within a relatively small area and manageable by mitigation measures.
Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH): Groundwater is the main source of potable water in the Sub-project area. Shallow tube-well is not common here and deep tubewell depth is 85-120 meters in the area. In the sub-project area, deep groundwater is fresh and potable, and arsenic free. Water from the shallower aquifers beneath the Sub-project area contains high concentration of iron. Deep groundwater table (drinkable) varies from 1000-1250ft (Field survey, 2022). Local people usually use deep tube-well water for drinking and other domestic purposes. There should have deep tube well which pump water from the confined aquifer.

Groundwater quality: pH-5.17 to 7.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.11 to 3.6 mg/l, Cl--10.0 to 130mg/l, Salinity- 0.10 to 0.40mg/l and As-Nil (DPHE Test Report, 2022)
Status of wildlife movement: N/A (None of the information was found about the wildlife movement in or across the area)
State of forestation: Homestead vegetation is very common and popular in this area. Besides, tree plantation in discrete patches is also observed in different places around the proposed site, which are safely distant from the sub-project site and will not face any significant detrimental effects from the construction works.
Summary of water balance analysis (For water supply scheme only): N/A

B.2: Pre construction Phase

Information on Ancillary Facilities (e.g. status of access road or any other facility required for sub-project to be viable): R&H Azam Road, Hyderpara road, Furarpara road, Kalarmarpar road, Pillarpara road and Miarakhata Wapda Beribandh can be used as access road for transportation. It is possible to carry construction materials on these roads to the construction site in limited traffic flow to avoid congestion.
Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the workforce during construction: Toilet and water supply facilities will be ensured by the contractor in the vicinity of the construction area for the sub-project, electric connection will be established with the accommodation facility due for the workforce.
Possible location of labor camps: Labor camp can be established near union parishad and space is also available beside Miarakhata chairman's home.
Requirement and type of raw materials (e.g. sand, stone, wood, etc.): i) Bricks, ii) Sand, iii) cement, iv) Gravel, v) water, vi) Aggregates, and vii) wood are the most common type of materials used for the construction of labor shed and site office during the pre-construction stage.
Identification of access road for transportation (Yes/No): Yes. R&H Azam Road, Hyderpara road, Furarpara road, Kalarmarpar road, Pillarpara road and Miarakhata Wapda Beribandh can be used as access road for transportation. Pickup, trucks, dumper trucks could be used as material transportation vehicles. Manual head load from unloading point to different locations can be done.
Location identification for raw material storage: Best option for raw material storage is any sufficiently available space next to the labor camp or the site office and away from steep slopes. However, this will need to arrange an open field and should be consulted with local communities.
Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.): Earth/ mud, plastics, brick chips, cement dusts, and dust from bricks can be found during pre-construction time which can be identified as solid wastes. Also, brick chips, cement, sand, bamboo stalks, remnants of tin and other leftover pre-construction materials can be found after the construction of labor camp, latrines and kitchen. Some salvage materials from road excavation may be generated at some places on the road. Negligible amount of bio and non-biodegradable Solid waste (incl. food waste, plastics, polythene, paper, etc.) may be produced from the use of working labors engaged in construction works of labor camp and associate facilities. Altogether amount of

those produced wastes in a single day is nearly 6 kg during the pre-construction phase.

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

B.3: Construction Phase

Solid waste: Residual waste from the labor camps will be generated. Wastes from equipment maintenance/vehicles on-site and scrap material will be generated during construction work, which are mostly solid wastes. Waste from civil works includes brick chips, leftover sands, construction debris, etc. And the overall quantity will be tentatively 5 kg daily. **Liquid wastes:** Leftover oils or spills from machineries may have a high probability to generate liquid waste. And the quantity can be tentatively 2 kg daily.
Type and quantity of raw materials used (wood, bricks, cement, water, etc.): **Type:** i) Bricks, ii) Sand, iii) cement, iv) aggregates, v) water, vi) bitumen, vii) used oil, etc. are the most common type of raw materials to be used in construction period. **Quantity**: It is difficult to give exact figures of construction waste produced on a typical construction site.
Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards: No such vegetation is present in the right of way. Specific soil amount is not needed for the project. The current condition explains that there is no aggregated soil on the right of way.
Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation) The possibility is Low, for stagnant water bodies. Because water usage will be higher during the construction period. Nonetheless, no possibilities of stagnation of water in the long run is anticipated. So, local communities have stated that they do not have severe troubles with mosquitos or other disease vectors.
Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description) Existing local drains, ponds and ditches can be disturbed by the construction works, especially from the dust, soil and oil spillage during this period. Proper mitigation and preventive measures must be put in place to reduce the impacts to the minimum level.
Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) Low. The improvement works will be limited within the Right of Way of this road component. Though there are some terrestrial or aquatic ecosystem present in that area in the form of canals, ponds, and ditches, majority of those features are located on sufficiently distant places from the road alignment, therefore negligible and short-periodical effects are anticipated. However, several canals are present very close-by, which might be affected and aquatic ecosystem may be disrupted severely. Therefore, strong vigilance and proper protective measures have to be ensured during the construction period. Also, the area is not known for containing any endangered or threatened species of any kind.
Activities that can lead to landslides, slumps, slips and other mass movements in road cuts: Construction activities such as cut-and-fill operations, slope stabilization or any mechanical operations that follow a faulty or incomplete operational procedure may lead to small scale landslides or mass movement in road cuts or adjoining land areas. The impacts are negative but short term, site specific within a relatively small area and manageable by mitigation measures.

Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with description) Low, potentiality is negligible as moderate to high sloping terrains are not common in the improvement area of sub-project.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: No traffic movement impacts on light but low effects of noise and air pollution, and will be managed by preventive measures, like water sprinkling twice a day, covered transport of materials and so on.

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

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles: During the operation phase, number of vehicles and frequency will be increased, though not to a significant time (as the road is now being used randomly). This growth has moderate potential to generate dust and blow those in the air, and contribute to health hazards and interference of plant growth.
Chance of long-term or semi-permanent destruction of soils: (High/Medium/Low with description) Low. Over use of road and frequent movement of heavy/overloaded vehicles may cause further destruction of road-bed soils and in turn early deterioration of road pavement, which could be managed by imposing barriers at strategic locations to stop entry of such types of vehicles.
Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: (High/Medium/Low with description) Not applicable.
Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation) There is no possibility of creating new stagnant water bodies that can encourage mosquito breeding and other disease vectors, during the operation phase.
Likely direct and indirect impacts on economic development in the project areas by the sub-project: Construction or implementation of a road project substantially contributes to the development of the project areas. It surely improves the communication network, reduces the transport time, increases the trade and business in/around the areas, and ensures access to better living conditions with amenities, better educational and job opportunities and health facilities. Thus, the direct and indirect impacts on economic development in the project areas would be enormous by this sub-project.
Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description) Existing drainage channels may be affected, if dust generated from frequent vehicle movement deposits on the still water level and any type of slope/soil movement is triggered. These effects are very local and can mostly be avoided by regular periodic maintenance of the road and setting barriers at several strategic points to limit the vehicle speed.
Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description) Low. Little effects on terrestrial ecosystem are anticipated due to the dust pollution/deposition and vehicular emission, though every ecosystem has some assimilative capacity on its own to lower the associated risks.
Activities leading to landslides, slumps, slips and other mass movements in road cuts: The entire sub-project component area is nearly flat; thus, no such type of impacts is anticipated.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open

drains: (High/Medium/Low with explanation) Low. Concentrated outflow will be carried by proposed drains and culvert.
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: Improved road communication will definitely increase the traffic/ vehicular movement, which must increase the light and noise pollution, but air pollution effect will not be increased significantly, as the proposed RCC road will reduce the pollution generated from dust, especially during the dry season and if the vehicles are maintained in good conditions.

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

Section D: Environmental Screening Summary

The results of Environmental Screening are summarized in following table as per guidance given in the Project ESMF, Section 8.2:

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicator	Frequency
1: Sub-Project Interventions	**Air quality**	Under the subproject intervention the overall score is **low**.	• Limiting earthworks; • Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; • Requiring trucks delivering aggregates or bricks and cement to have tarpaulin cover and Limiting speed of construction vehicles in access roads and work sites to maximum of 20 kph.	Construction Contractor monitored by Consultant and PIU	• Location of stockpiles; • Number of complaints from stakeholders; • Covering of trucks; • Records of air quality inspection	Visual monitoring of air quality and if requires, air quality test (CO, $PM_{2.5,10}$) once in construction period in winter season.
	Soil impacts	Under the sub-project intervention the overall score is **low.**	• Precautions might be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. • The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or covered. • The material stockpile sites shall be far away from surface water bodies	Construction Contractor monitored by Consultant and PIU	• No visible degradation to nearby drainages, • khals *(canals)* or water bodies due to soil erosion. • Rain storms in construction	Monitoring on weekly basis.

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicator	Frequency
			and areas prone to surface run-off. Loose materials shall be bagged and covered. • Channels, earth bunds, netting, tarpaulin and or sand bag barriers shall be used on site to manage surface water runoff and minimize erosion. • The overall slope of the work areas and construction yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. • Cut-and-fill operations on the hill slope and slope stabilization shall be carried out step by step following proper operational procedures.		phase.	
	Hydrology (surface and groundwater)	Under the subproject intervention the overall score is **low**.	• All precautions to store chemicals/oil/fuel properly so that no chance of spill. • Workers must specify waste dump locations to avoid littering which in turn might negatively affect surface and ground water. • Monitor water quality according to	Construction Contractor and monitored by Consultant and PIU	• Areas for stockpiles, storage of fuels and lubricants and waste materials; • Records of	Water quality test (mainly GW) twice during the construction period in six months interval.

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicator	Frequency
			the environmental management plan.		water quality inspection; Water Quality Test • (National Drinking Water Quality Standard Parameters)if requires; • Visible degradation to nearby drainages, *khals (canals)* or water bodies due to construction activities. • Records should be kept and logged.	

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicator	Frequency
2: Pre-construction Phase	**Sanitation, water supply**	Under the subproject intervention the overall score is **low**.	• Provide suitable housing, adequate supplies of potable water, and toilet and bathing facilities within labor camp area for the assigned laborer. • Provide means for disposing of wastewater from toilets, baths and food preparation areas either through a septic tank and soak away, or holding tank with removal by vacuum truck. • Records for any type of training or awareness building sessions must be kept at site.	Construction Contractor and monitored by Consultant and PIU	• Site-specific H&S Plan; • Records of supply of uncontaminated water; • Record of Health &Safety orientation trainings; • Condition of sanitation facilities for workers	Visual inspection by PIU and supervision consultants on monthly basis
	Transportation	Under the subproject intervention the overall score is **low.**	• Contractor should verify vehicles for the suitability of carrying, loading and unloading of materials	Construction Contractor and monitored by Consultant and PIU	• Record of regular inspection. • Record of accidents/incidents.	Monthly monitoring.
	Storage of construction materials	Under the subproject intervention the overall	• Train concerned person and team assigned for the construction work to ensure items are stored properly and away from steep slopes.	Construction Contractor and monitored by Consultant and PIU	• List of materials and sources of materials	During implementation phase, as necessary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicator	Frequency
		score is **low**.				through discussion with PIU, Consultant
3: Construction Phase	**Wastes**	Under the sub-project intervention the overall score is **low.**	• Prepare and implement on-site waste water runoff and labor camp waste management plan approved by PIU and consultants. • Wastes must be placed in the designated bins which must be regularly emptied. These shall remain within demarcated areas and shall be designed to prevent wastes from being blown out by wind. • All waste must be removed from the site and transported to a disposal site.	Construction Contractor and monitored by Consultant and PIU	• Complaints from community; • Regular inspection of waste management activity; • Waste disposal record.	weekly as work progresses
	Cut and fill Activities (Cutting of hill slope and earth removal from borrow areas	Under the sub-project intervention, the overall score is low.	• During construction cut and fill will be balanced as far as is possible. Designs shall ensure that as far as possible all cut and fill activities are balanced • Proper care will be taken during	Contractor, environmental specialist of D&S.	• Location of road alignment and slope.	Daily as work progresses

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicator	Frequency
	caused for soil erosion and landslides)		cutting and filling so that slope or toe of the road embankment remain within the right of way and does not disturb the crop.			
	Storage of materials	Protected and safety storage to be needed for construction materials storage. Not interrupt natural land contours, disturbance in natural drainage patterns and logging of water and the overall score is **low.**	With the assistance from local stakeholders and LGED officials, respective E-I-C will identify the storage site and other requirements, which will be approved by PIU and consultants. However, following sets of requirements shall be taken into consideration: • Storage area will be sufficiently spacious so that unloading works can be performed inside the area and materials must not be rest on road side, near the water bodies, or trees and bushes, and will not be located in any crowded place. • Storage area must be well fenced with guard posted at the entrance and at least 30 m distant from any water bodies. • Construction materials must not interrupt land contours, natural	Construction Contractor and monitored by Consultant and PIU	• List of materials and sources of materials; • Storage areas for materials and equipment.	Monthly basis during implementation phase, as necessary through the discussion with PIU, Consultant

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicator	Frequency
			drainage pattern, and create water logging or depression. • Cement, sand, reinforced bars, stone chips, aggregates etc. must be covered with tarpaulins, and end of reinforced bars will be capped with plastic caps or covered with sacks/clothes to avoid any health injury. • Chemicals and hazardous materials including oil, grease, bitumen, etc. shall be kept in a Cement concrete bunded area or on wooden stage covered with polythene/tarpaulin.			
	Removal of Vegetation (May cause soil erosion and their deposition on nearby crop field, affecting soil quality and productivity)	Under the sub-project intervention, the overall score is **low.**	• If during detailed design cutting of trees is required, compensatory plantation for trees lost at a rate of 5 trees for every tree cut. • Prevent workers or any other person from removing and damaging any flora (plant/vegetation) and fauna.	Contractor, environmental specialist of D&S.	• Complaints from community	Daily

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicator	Frequency
	Noise pollution	Under the subproject intervention the overall score is **low.**	• Consultation with affected people; not to operate noisy equipment during working period; • No noisy work after 5.00 pm. • Sound suppression for equipment; • Ear protection for workers. • Conduct noise quality monitoring as per ESMP.	Construction Contractor and monitored by Consultant and PIU	• Number of complaints from stakeholders; • Use of silencers in noise-producing equipment and sound barriers; • Noise Level following decibel meter (dB), if required.	Inspection by PIU and supervision consultants on monthly basis;
	Air pollution	Under the subproject intervention the overall score is **low.**	• Water spraying for dust control; construction materials with potential for significant dust generation shall be covered; no smoke emitting equipment; and limiting speed of construction vehicles in access roads and work sites to maximum of 20 kph.	Construction Contractor and monitored by Consultant and PIU	• Location of stockpiles; • Number of complaints from stakeholders; • Records of air quality inspection.	Visual observation and monitoring of air quality during construction period.

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicator	Frequency
	Fire Hazards/ Fire Safety	Under the sub-project intervention, the overall score is low.	• Contractor will be encouraged to use of inflammable material for the construction of labor housing / site office. • Appropriate type of firefighting equipment suitable for the construction camps will be provided. • Emergency contact numbers shall be displayed clearly and prominently at strategic places in camps. • Communicate the roles and responsibilities of laborers in case of emergency in the monthly meetings with contractors.	Contractor, Environmental specialist of D&SC	Numbers of complaints from workers, Number of fire extinguishers, posters containing emergency contact numbers.	Monthly and as required during the construction period.
	Road Safety and Accidents	Under the subproject intervention the overall score is **medium.**	• Works will be undertaken in phase wise; in each working section half of the road pavement area will be properly cordoned for improvement works, and rest half will be open for traffic movement. • Erection of suitable signage at construction sites • Direct observation and discussion with local people • Restrict the transport of oversize loads. • Operate construction vehicles to	Construction Contractor, environmental specialist of D&SC.	• Complaints from communities, pedestrians	Day basis during work time

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicator	Frequency
			non-peak periods (night) to minimize the traffic disruption. • Enforce on-site and access road speed limits. • The contractor shall provide, erect and maintain informatory/safety signs written in local language, wherever required or as suggested by the Environmental Specialist of D&SC. • Local residents should be kept informed about planned Works.			
4. Post Construction	**Road Safety**	Under the issue the overall score is **low**.	• Install traffic signs for speed limit, speed breaker where needed, Mile post and create adequate **traffic** detours, and sufficient **signage** & **warning** signs, Post speed limits and suitable bending on the road. • Imposing barriers at several strategic places on the road to limit the movement of overloaded or heavy vehicles. • The contractor shall provide, erect and maintain informatory/safety	Construction Contractor, environmental specialist of D&S.	• Road signage and safety instruments at suitable locations and chainage	Immediately after the construction work is over.

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicator	Frequency
			signs written in local language, wherever required or as suggested by the Environmental Specialist of D&S.			
	Tree plantation	Under the issue the overall score is **low**.	• Plantation of trees during monsoon period • Maintain of trees properly • Check survival of trees and replant the dead trees	Construction Contractor, environmental specialist of D&S.	• Number of complaints from stakeholders; • Records of trees number and tree plantation inspection.	Immediately after the construction work is over.
5. Operational Phase	**Maintenance of road and assets** (Road accidents may increase due to higher number of vehicles using the roads at increased speeds)	Under the issue the overall score is **low**.	• No advertisement/boardings shall be allowed within the Right of Way limits of the project road. • Regular maintenance and cleaning of assets such as sign boards, road safety sign etc. shall be undertaken. • Clear smooth speed breaker/rough surfaces should be clear in views. • Regular maintenance of road surface and shoulders.	LGED	• Number of complaints from stakeholders.	During Operation under LGED's regular maintenance program in each 3 years.
6. Potential Natural	**Loss of (damage in)**	Under the issue the	• Construction works shall be undertaken cautiously considering	Contractor, M&S by Consultant and PMU	Complaints from	Over the construction

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/Institution Responsible	Monitoring Suggestions	
					Indicator	Frequency
Hazards (e.g., flooding, landslides, cyclones, etc.	**lives, dwellings and possessions.**	overall score is low.	the soil quality, slope stability/ land sliding risks, and climatic potentials. • Emergency evacuation and sheltering during the disaster period have to be ensured, in coordination with respective government departments and local CPP volunteers.		communities, No. of events taken place, No. of people sheltered and evacuated.	and operation period.

* Overall Impact Score: High = Likely to cause long-term E&S impacts; Medium = Likely to cause temporary impacts; Low = Likely to cause little, short-term impacts

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes

**If yes, please specify what assessments/plans would be required.* Mention some recommendation on E&S assessment …. ESMP

If site specific environmental and social management plan (ESMP) is followed the impacts can be mitigated and monitored. ESMP is attached.

Appendix-2: Environmental and Social Management Plan (ESMP) of the Sub project

ESMP for Access and evacuation Roads: Improvement of road by RCC pavement in Mirakata from Ch:00-2000m in Kutubdia Upazila

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land / and other physical assets	• No land acquisition is allowed within this sub-project activities So, there are no any mitigation measures according to this impact.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of livelihood	• Under this subproject, there is no scope of negative impact of adjacent livelihoods	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	• All of the project stakeholders should be consulted • Separate community level consultation meeting with the potential affected HHs • Consultation meeting with host communities about the project objectives and scope of works	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	• Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. • In case of unavoidable circumstances, alternative access will be provided.	PIU	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Transportation and Storage of Construction materials (disturbance to traffic system and	• Transportation of construction materials to the site will be carried out by covering the materials as a whole, or covering the end part of iron-bar with plastic caps/	Contractor	Environmental Consultant of PIU, PSC

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	pedestrians, potential accidents to workers/ local people, generating dust and noise)	clothes/ sacks or drenching the sand while transporting. • Store the materials in designated places, with proper fencing and coverings.		
Pre-Construction Stage	Sanitation and water supply	• Sanitation facilities (male and female toilets, wash-basins, etc.) for workers and constructor's officials/employees will be provided. • Potable water supply will be ensured for every workers/employees in the site. Water sample will be checked at local DPHE laboratory to ensure the portability, and water should be filtered through appropriate filtering system, before supplying to the consumers.	Contractor	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	• Selection of sub-project sites and all implementing interventions must take place outside of the elephant corridor/influence area.	PIU	Environmental Consultant of PIU, PSC
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	• All Sites must avoid the low land near the water bodies or natural flow path to avoid the flash flood or any kind or surface runoff. • Tubewell location within the construction site is not near to any kinds of latrine and soaks well which could be contaminated by those. • After completing the development, the site shall be restored as before. • This site is in the local community, so continuous need-based discussion with the local community to avoid any conflicts will be taking place.	PIU & Contractor	Environmental Consultant of PIU, PSC

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Sub project intervention must avoid natural disturbance to existing slop and natural drainage. • The contractor must ensure sound environment for the local residents near the sub project site.		
Construction Activity	Noise from construction works	• Construction activities mostly will finish at day time within 05 PM, and must confirm proper measures for avoiding any disturbance. • All Personal Protective Equipment (PPEs) must be available at sites before starting any kinds of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	• Acceptable range of emission of CO, particulate matter [SPM (**Suspended particulate matter)**, PM2.5, 10] and Hydrocarbons must be maintained through good construction work practices. • Dust generation must be limited as a result of clearing, leveling and site grading operations with using water florescent manually and through water pipes. • Dust generation due to vehicle movement on connecting road shall be controlled by watering the path at limited level	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Safety Issues	• Unauthorized entry is completely prohibited in construction site and take necessary measures for preventing this problem • Before works start Contractor must provide proper training and guidance on health and safety issues to the labors and associated staffs.	Contractor	Environmental Consultant of PIU, PSC

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Records of every training must be kept at site. • All kinds of Child labour are completely prohibited in every site. • Every construction materials storage site will be well fenced by Tin and safety caution tape.		
Construction Activity	Traffic Management	• Because of the sensitivity of the proposed project site in relation to traffic management, contractor must produce a detail Traffic Management Plan (TMP), incorporating all forms of alternative routes, schedule, work plan, emergency arrangement, etc. in the TMP. • Contractors will maintain proper route for traffic management which is to be consulted with and confirmed by the Executive Engineer of Cox's Bazar. • Local traffic police department should be contacted, if traffic problem becomes more complex.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	• A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. • If ground water is withdrawn, adequate approvals from the appropriate department need to be collected before setting up bore wells. • Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be kept on site. • Local community must be consulted before any construction works starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Increase in road accidents	• Maintain safety measures during the movement of heavy machinery and equipment. • Local community will be trained up on traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labor Base Camp: Conflicts with the local residents	• Awareness building session will be undertaken about prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. Written records of this awareness building session shall be kept on site. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labor camps will be put in place. • Treated water will be made available at site for drinking purpose. • Adequate accommodation arrangements for labor forces. • Labor code of conduct is to be disclosed through consultation.	Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Construction Activity	Waste Management: Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects: • Residual waste from the temporary accommodation facilities Waste and from equipment maintenance/vehicles on-site • Wastes after completion of construction works. So,	Contractor	Environmental Consultant of PIU, PSC

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		recycling process is not applicable. • Proper consents for hazardous waste management.		
Construction Activity	Slipping of soil masses, dust deposition, draining or spillage of chemicals/contaminants, etc. to nearby water bodies	• Slope protection measures (proper compaction, palisading or protection walls, etc.) will be taken before starting work at any sensitive section of the road. • Dust suppression measures and material storage and handling procedure have to be undertaken with proper care and vigilance to avoid or minimize the impacts.	Contractor	Environmental and Social Development Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: • The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. • Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	• All construction equipment will be properly inspected timely. • The risk assessment will be prepared and communicated prior to the commencement of work for all types of work activities on site. • Preparation of proper walkways and clearly designation as a walkway has to be ensured; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. • Proper Signpost at any slippery areas will be ensured in construction site. • Fire extinguishers will be located at identified fire points around the site. The extinguishers must be appropriate to the nature of the potential fire. • This sub project will have Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and	Contractor	Environmental Consultant as well as Social Development and Gender Specialists of PIU, PSC

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		authorities' responsibilities and expertise, emergency response and evacuation procedure and personnel will be trained and drilled to test and ensure the coherence with the plan. • All people of construction site will be concerned about the safety and maintenance of Electrical equipment; works will be carried out on live systems. • Provision to first aid box in sub-project areas will be ensured. • Proper Emergency evacuation response plan will exist in sub-project area. • All safety equipment will be available in sub-project site (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), the lowest vibration tools will be provided that are suitable and can do the works. • Awareness training will be given to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. Written records of this awareness training shall be kept on site. • Adequate quantities of drinking water will be available at all Sites, on different locations within the site. • Provision to maintain proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities.		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Provision to ensure all workers exposed to a risk are aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction activity	Odours and pollution caused by leaking latrines and faecal sludge, and solid wastes impacting surrounding water bodies, flora and fauna	• Preventative maintenance schedule should be followed. • Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste disposal area away from the camp site. If no designated site is available within the reach, a dug-hole at a nearby place can be used with periodic filling with soil layer for preventing pollution and generating nutrient rich compost soil over time.	Contractor	Environmental Consultant of PIU, PSC. Union Parishad Member
Construction Activity	Demobilization of structures, facilities and equipment used during the project implementation period (including site clearance and restoration after the construction). The impacts are similar to those listed in construction stage: ✓ Pollution from waste materials ✓ Health & Safety risks to workers and local community	• Contractor must prepare a waste management plan including relevant directives from "Waste Management Plan Principles" given hereunder.	Contractor	Environmental Consultant of PIU, and Executive Engineer of Cox's Bazar
Operation &	Road Safety. Impacts include:	Road safety issues can be minimized in following ways:	UE (under the	District Executive

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

Waste Management Plan/Principles:

The contractor shall develop a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food, and organic waste, etc.) prior to commencing of construction and submit to LGED for approval. The plans must include the following principles or series of actions, which will be carried out/followed by the contractor and supervised by the Field level Environmental Specialist and Social Development Specialist.

- Preventing waste from throwing, leaching, or getting access to water bodies has to be maintained strictly by the contractor. Material storage site or the primary storage of waste materials shall not be closer to any water body (running or stagnant); the distance of the water body should be at least 10m from the edging part of storage.
- The quantity of waste materials shall be minimized by 3R (Reduce, Recycle and Reuse) approach and wastes shall be segregated accordingly, wherever practical; and stored in designated places/facilities in the site.
- Labor camp and construction site shall be maintained in a cleaner, tidy and safe condition, and appropriate facilities shall be provided and maintained as temporary storage of all wastes before transportation and final disposal. Waste, irrespective of types, shall not be stored/ piled up in the middle of the road or on such a place which may obstruct traffic movement or water runoff or might be a source of an accident or public nuisance.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area and subsequently sold to authorized recyclers.
- Parts of construction debris (from demolishing of labor camp and toilets in the post-construction phase) can be recycled as filling materials on the ground or be sold for use as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed off in an environmentally acceptable manner. This will include consideration of the nature and location of the disposal site, so as to cause less environmental impact.
- Soil contaminated with bitumen or petroleum/engine oil shall be removed from the site and stored in a specific place, and later disposed off in a designated dumping area. Careful handling of these hazardous substances in the site shall be maintained and supervised by the contractor.
- Organic wastes produced in the campsite during the construction period shall be collected and transported in vehicles covered with tarps or nets to prevent spilling waste along the route to the designated disposal site; Burning of any type of wastes in a labor camp or construction site shall be prohibited completely.

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Appendix-3: Cost of Environmental Enhancement Works in BOQ

In consideration of the above-mentioned environmental impacts and their mitigation measures for this sub-project, the following items are included in the BOQ of this sub-project. Here should be noted that, parts of environmental management and enhancement works including construction and maintenance of alternative passage (and removal during post-construction period), drainage structures, slope protection measures, road safety measures, etc. are included in physical works and shown in the respective parts of BOQs, and therefore are not repeated here.

Sl no.	Description of item	Quantity	Unit price	Total amount
1.	**Grass Turfing** Turfing on embankment top and slope & any critical place with good quality turf supplied by the contractor of not less than 225mm square in dimension including placing and watering till grass is fully grown, etc. all complete as per direction of E.I.C. (Payment to be made only when grass is fully grown)	2,490.0 Sq.m	@38.15 Tk. Per sqm	94,993.50
2.	**Dust suppression measures** Dust suppression measures like water sprinkling on aggregates/unpaved roads, in and around the work site and as per direction of E-I-C	2000.0m	@ 2.56 BDT	5,120.00
3.	**Water Supply and Sanitation** Providing and maintaining adequate portable water supply, sanitation, cleanliness facilities at camp site and work site to the entire satisfaction of Engineer-in-charge. Temporary Toilet: Construction of temporary toilets in work site/ rest area complete as per design and specifications and approved by the Engineer-in-Charge. There should be 1 camp in each site. In each camp, there should be 1 no of toilet for women and 1 no of toilet for men.	2 nos.	@12822.86 per toilet	25,645.72
4.	**First Aid Box** Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge.	1 no.	LS @5000 Tk. Per box	5,000

Sl no.	Description of item	Quantity	Unit price	Total amount
5.	**Drinking Water Facilities** Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge.	2 no.	LS @ Tk. 30,000	60,000
6.	**Traffic Management** Maintaining traffic management at worksite from time of commencement of contractor's activities to time of completion activities, including ensuring that the road is safe for users, providing a safe working area for those involved in work on trafficked network and minimizing any disruption to smooth flow of traffic (this includes providing necessary barricades, warning signs/lights, guide signs, flagmen, maintaining diversion roads by cutting, filling, constructing, etc. or by any other means) in accordance with the full satisfaction of the Engineering-in-charge.	1 no.	LS @ Tk. 15,000	15,000
7.	**Personal Protection Equipment for Workers** Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket, (ii) suitable hand protection gloves, (iii) appropriate foot protection shoes, (iv) best quality safety helmets, face shields, ear muffs etc. (v) suitable eye protection goggles.	LS	LS @ Tk 30,000	30,000

Sl no.	Description of item	Quantity	Unit price	Total amount
8.	**Tree plantation** Tree plantation to compensate the felled down trees and enhance the ecological condition in the subproject area- preferably local fruits, flowers, medicinal and ornamental trees- Mango, Jackfruit, Jam, Kathbadam, Chalta, Krisnachura, Bokul, Jarul, Polash, Kadom, Shimul, Neem, Arjun, Amloki, Horitoki, Bohera, Mahogany, Palm Tree, Chambal, Rain Tree, Shil koroi, Satim, Sishu (including protection, fencing and conservation during project defect liability period): Preferably at both sides of Road where space is available (fencing as per LGED rate schedule 5.26.14) (Contractors will also be instructed by the consultant and PIU prior to the tree plantation work) at an interval of 10 feet.	25 nos.	@ Tk. 1000	25,000
9.	**Motivation training** Motivation training (twice: before and after construction start) of the Upazila Engineer 'sand Contractor's representatives on safety practice and as per direction of the E.I.C.	1 no.	LS @ Tk. 10,000	10,000
10.	**Waste disposal facility** Temporary camp site waste disposal facility improvement 2 nos. (1 no of organic waste and 1 no of inorganic waste disposal facility) and as per direction of E.I.C.	LS	@ Tk. 5000	5,000
11.	**Water Test (Drinking Water samples)** Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total dissolved solids, nitrate, nitrite, coliform, electrical conductivity etc. all complete as per direction of E.I.C. (including the cost of actual fees for testing from reputed laboratory and report) as desired by E.I.C.	LS	@ Tk. 5000	5,000
12.	**Working labour shed:** Construction of Labor shed (Size: 30'x20') with C.I sheet Roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1 no.	LS @ Tk. 30,000	30,000
13.	**Environmental management** Environmental management costs of the Environment & Social/ Safeguard Personnel for Environmental and Social Management and Monitoring during construction and operation phase for their salary & transport (Net payment excluding Tax &VAT). And as per direction of the E.I.C.	1 person	Monthly basis @Tk. 35,000.00 for 12 months. One person covering 1 road i.e.,35,000Tk.*	420,000

Sl no.	Description of item	Quantity	Unit price	Total amount
			12months*. (Net payment excluding Tax &VAT).	
	Subtotal Bill: Environmental Enhancement Works			**730,759.22**

Cost of H&S Measures under COVID 19 Situations

Considering the emerged situation, following budget/cost has been estimated for the protection of workers and staffs working or engaged in construction sites. The cost is estimated counting 40 workers for 270 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/AF/W15).

Sl. No.	Description of Item	Number of items to be used/kept at			Unit Cost (BDT.)	No. of items	Total Cost/ Price (BDT.)	Remarks/ Justification
		Site Office	Working Site	Labor Camp				
1.	Non-Contact IR Digital Thermometer	01 nos. in each site	N/A	N/A	5,000.00	1	5,000.00	Each site office will have a thermometer for checking body temperature every morning at the entrance of the working site
2.	Wash Basin with Small Water Tank, Bucket and Mug (or piped water supply)	01 nos. in each site	N/A	01 nos. in each camp	10,000.00	2	20,000.00	Wash basin to be installed at favorable locations immediately after the entrance to the facility
3.	Trash bin (covered)/Paddle Bin	01 nos. in each site	N/A	01 nos. in each camp	550.00	2	1,100.00	

4.	Bar Soaps (150 gm each)	108		135	50.00	243	12,150.00	To be placed in a case/holder on the basin, for washing hands for max. 45 people a day and showering of 40 workers in each labor camp.
5.	Hand Sanitizer (2 nos. 250 ml bottle and 5 liter Can for Refill)	2 bottles and 1 Can for each site	N/A	N/A	4,000.00	1	4,000.00	2 bottles and a 5 litre can for each Site office
6.	Face Shield/ Protective Safety Goggles	24 nos. for each site		N/A	400.00	24	9,600.00	For labors who work in close contact, 24 in each site
7.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	1350	16,200.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
8.	Cloth mask for Workers	N/A	40 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
9.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
10.	Detergent Cleaner	N/A	2 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
11.	Miscellaneous cost				20,000.00	1	20,000.00	Contingency cost for medical emergency and compensation for workers, subject to proper documentation
	Grand Total						**121,325.00**	

Appendix-4: List of Participants in the Consultation Meeting

Package Number : LGED/EMCRP/AF/W15
Road ID Number : 422452024

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় মাল্টি সেক্টর প্রকল্প
Local Government Engineering Department (LGED)
Public Consultation Participants List
Communication and Participation Programme
Focus Group Discussion

সময়: বেলা ১১:০০ ঘটিকা তারিখ: ১৪/৬/২০২২
উপ-প্রকল্প/কার্যক্রমের নাম: Improvement by Rcc pavement in Mirakata Road.
সভা অনুষ্ঠিত স্থান: ইউনিয়ন পরিষদ কার্যালয়
ইউনিয়ন: উত্তর ধুরুং ওয়ার্ড নং: ০৭ ডাকঘর: উত্তর ধুরুং 4720 উপজেলা: কুতুবদিয়া জেলা: কক্সবাজার

অংশগ্রহণকারীদের তালিকা (পরিচয় ও স্বাক্ষর):

ক্রম নং	নাম	বয়স	পুরুষ/নারী	গ্রাম	স্বাক্ষর / টিপসই
১	আলহাজ্ব আব্দুল হাকিম মিয়া	৫২	পুরুষ	[illegible]	[illegible]
২	মোঃ মনজুর আলী	৪৫	পুরুষ	[illegible] পাড়া	[illegible]
৩	আবু এম এম শফিক আবু বক্কর	৩৮	পুরুষ	আমিন উদ্দিন সিকদার পাড়া	[illegible]
৪	মোঃ আবু আলম	৩০	পুরুষ	ফকরউদ্দিন মাস্টার বাড়ী	[illegible]
৫	মোঃ ওয়াহেদ কুরশী	২৮	পুরুষ	হাজেরা [illegible]	[illegible]
৬	কামাল হোসেন	৩২	পুরুষ	আমিন উদ্দিন সিকদার পাড়া	কামাল হোসেন
৭	মোঃ আতাউল্লাহ	৫০	পুরুষ	মন্তাজ মিয়া পাড়া	[illegible]
৮	মোবারক হোসেন	৪৫	পুরুষ	আকবর বলি পাড়া	[illegible]
৯	আব্দুল লতিফ	৩৫	পুরুষ	আমিন উদ্দিন সিকদার পাড়া	[illegible]
১০	ফোরকান উদ্দিন	৫৭	পুরুষ	নয়া বাড়ী	[illegible]
১১	মোঃ নুরুল আবছার	৪২	পুরুষ	উত্তর ধুরুং	[illegible]
১২	মোঃ ফোরকান উদ্দিন	৫৭	পুরুষ	আমিন উদ্দিন সিকদার পাড়া	[illegible]
১৩	মোঃ আমিন	৩০	পুরুষ	[illegible]	[illegible]
১৪	আ মঃ সাহাব উদ্দিন কাজল	৩০	পুরুষ	হায়দার পাড়া	[illegible]
১৫	মোঃ [illegible]	২৭	পুরুষ	হায়দার পাড়া	[illegible]
১৬	মোঃ ইলিয়াস	৩২	পুরুষ	[illegible] পাড়া	[illegible]
১৭.	মোঃ- ফরিদুল ইসলাম	৪৮			[illegible]

Package Number : LGED/EMCRP/AF/W15
Road ID Number : 422452024

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় বহুমুখী সেক্টর প্রকল্প

Local Government Engineering Department (LGED)
Public Consultation Participants List
Communication and Participation Programme
Focus Group Discussion

সময়: [illegible] তারিখ: [illegible]/2022

উপ-প্রকল্প/কমপোনেন্ট এর নাম: Improvement by RCC Pavement in Mirakoda Road

সভা বিনিময় স্থল: [illegible]

ইউনিয়ন: [illegible] ওয়ার্ড নং: ০৭ মৌজা: [illegible] 4720 উপজেলা: [illegible] জেলা: কক্সবাজার

অংশগ্রহণকারীদের তালিকা (পরিচয় ও স্বাক্ষর):

ক্রম নং	নাম	বয়স	পুরুষ /নারী	গ্রাম	স্বাক্ষর / টিপসই
১৮	মোঃ [illegible]	[illegible]	পুরুষ	[illegible]	[illegible]
১৯	[illegible] আলী	৪২	পুরুষ	[illegible]	[illegible]
২০	মোঃ [illegible]	৬৫	পুরুষ	[illegible]	[illegible]
২১	মোঃ [illegible]	৬২	পুরুষ	[illegible]	[illegible]
২২	[illegible]	৬৬	পুরুষ	[illegible]	[illegible]
২৩	[illegible] আলী	৪২	পুরুষ	[illegible]	[illegible]
২৪	মোঃ হাবিব	৬৭	পুরুষ	[illegible]	হাবিব
২৫	আলী [illegible]	৪২	পুরুষ	[illegible]	[illegible]
২৬	[illegible] আলী	৪০	পুরুষ	[illegible]	[illegible]
২৭	[illegible]	৫১	পুরুষ	[illegible]	[illegible]

Public Consultation Participants' List

Appendix-5: Pictorial View of the Sub-Project sites at different chainage

Overview of surrounding features of the Sub-Project