Government of The People's Republic of Bangladesh

Ministry of Local Government, Rural Development and Co-operatives

Local Government Engineering Department (LGED)

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

ENVIRONMENTAL SCREENING REPORT

Sub-project: EMCRP/W3
Relief Administration and Distribution Center in Ukhiya Upazila of Cox's Bazar District
Union: Rajapalong; Upazila: Ukhiya;
District: Cox's Bazar
March 2020

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Government of the People's Republic of Bangladesh

Consultant:

Development Design Consultants Ltd.

Contents

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
EMP	Environmental 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 Brick
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
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

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 to reduce the vulnerability of Forcibly Displaced Myanmar National (FDMN) along with people from the host communities in Teknaf and Ukhiya Upazila 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.

The objective of the Project is to provide greater protection for the FDMN and host communities through:

- Reducing the vulnerability to natural disasters
- Improving social service deliver y system
- Improving water and sanitation facilities
- Reducing vulnerability to accidental fire
- Provisioning better educational facilities and
- Strengthening and scaling up of GBV prevention services to the FDMN

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

1.2 Background of the Sub-project

The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar and host communities in Cox's Bazar, within the scope of improving access to basic services and building disaster and social resilience of the displaced population. This document represents the Findings from Environmental Screening of the sub-project for the construction of **'**Relief Administration and Distribution Center in Ukhiya Upazila of Cox's Bazar District**', under the tender package no. EMCRP/W3.**

Under this pacakge, a new Relief Administration and Distribution Center will be constructed in Rajapalong union of Ukhiya Upazila under Cox's Bazar district. Relevant significant and/or sensitive features of the sub-project area have been tabulated in Table 1.2.1 and 1.2.2.

Table 1.2.1: Significant features of the Sub-project

Package Name: EMCRP/W3: Relief Administration and Distribution Center in Ukhiya Upazila of Cox's Bazar District.	
Component Location:	
i. Place: Ukhiya Sadar	ii Name of Union: Rajapalong
iii. Name of the Upazila: Ukhiya	iv. Construction Year: 2019-2020
v. Water Status: Available	vi. Water Source: Shallow Tube-well, Deep tube-well
vii. Distance from UZHQ: 50m	
viii. GPS Coordinates	Latitude Value: 21.248024 N Longitude Value: 92.138621 E
ix. Communication Source	Radio & Mobile Network
x. Owner of land	Government own land
xi. Tribal people	No tribal people found in the catchment area of the Sub-project
xii. Connecting road	01 BC road is connected to Cox's Bazar-Teknaf highway
xiii. Land acquisition	Not required
xiv. Profession (in Upazila)	Farmer 45%, day labor 25%, businessman 15% and others 15%
Subproject Interventions: 1. 2 storied building with 4 floor foundation (now being constructed up to 2nd floor under this package) 2. Length 140 feet, Width 100 feet	
Implementing Agency: Local Government Engineering Department (LGED)	
Expected construction period : 2019-2020	
Estimated total cost of component: 2,00,00,000 (Tk.)	

[D&SC and Field survey, 2019]

Table 1.2.2: Sensitive/important features around the subproject area

Feature	GPS location	Distance (m)
Upazila office	21°41’ 53.40”N and 92° 08’ 16.91”E	50m
Mosque	21°14’ 52.65”N and 92° 08’ 16.58”E	50m
Ukhiya Govt. Primary school	21°14’ 46.66”N and 92° 08’ 12.01”E	250m
A big pond	21°14’ 50.58”N and 92° 08’ 18.27”E	200m
Building	21°14’ 52.67”N and 92° 08’ 19.64”E	40m
Road	21°44’ 52.63”N and 92° 08’ 18.99”E	30m

This Environmental Screening Report will screen out the major environmental features of the proposed sub-project site and surrounding areas and assess the potential impacts in respect to the planned interventions on the site and also suggest with site and activities specific management plan including appropriate mitigation options.

1.3 Location of Sub-Project

The Sub-project is located in Ukhiya Sadar of Ukhiya Upazila in Cox’s Bazar District. The site location is relatively a high plain land, free from any obstruction and easily accessible through a 12 feet wide BC road of nearly 200 m in length up to the site, which is connected to the Cox’s Bazar-Teknaf Highway. Ukhiya Govt. Primary School is situated within 250 m reaches of the proposed site. The location details of the Sub-project have been summarized in Table 1.3.1. The District Map with project location and Upazila Map with Sub-project location have been shown in Figure 1.3.1 and Figure 1.3.2 respectively.

Table 1.3.1: Location Details of the Sub-project

Division	Chittagong
District	Cox’s Bazar
Upazila	Ukhiya
Union	Rajapalong
GPS position	21.248024 N and 92.138621 E
Distance from Upazila HQ	50m
Nearby major road	Cox’s Bazar- Teknaf highway
Nearby river/canal	A khal named Reju khal is at 1.5km north
North side of the Upazila	Ramu upazila
South side of the Upazila	Teknaf Upazila
East side of the Upazila	Naf river and Naikhyungchori Upazila of Bandarban District
West side of the Upazila	Bay of Bengal

[Field survey, 2019 & LGED, 2015]

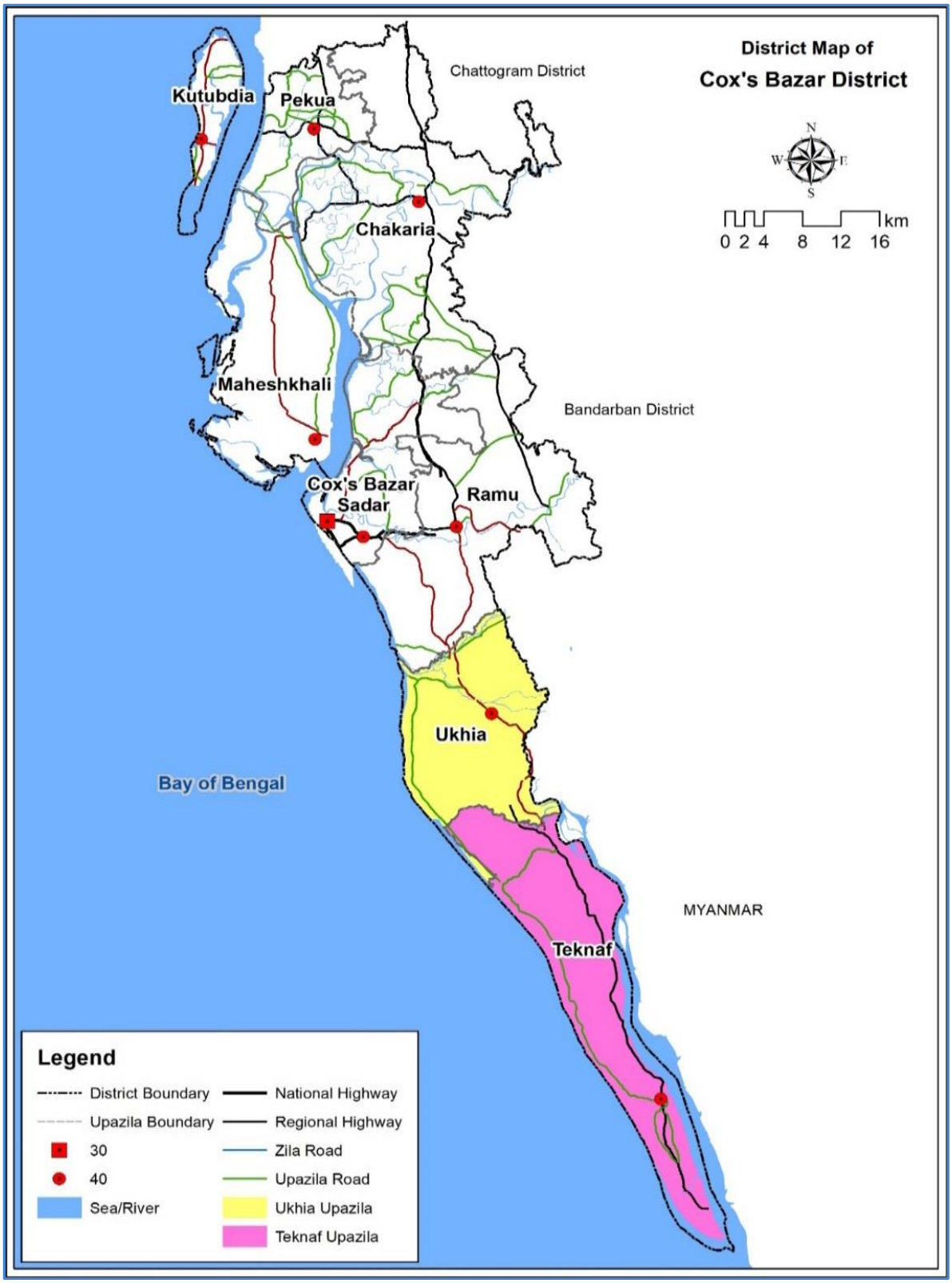


Figure 1.3.1: District Map with project location

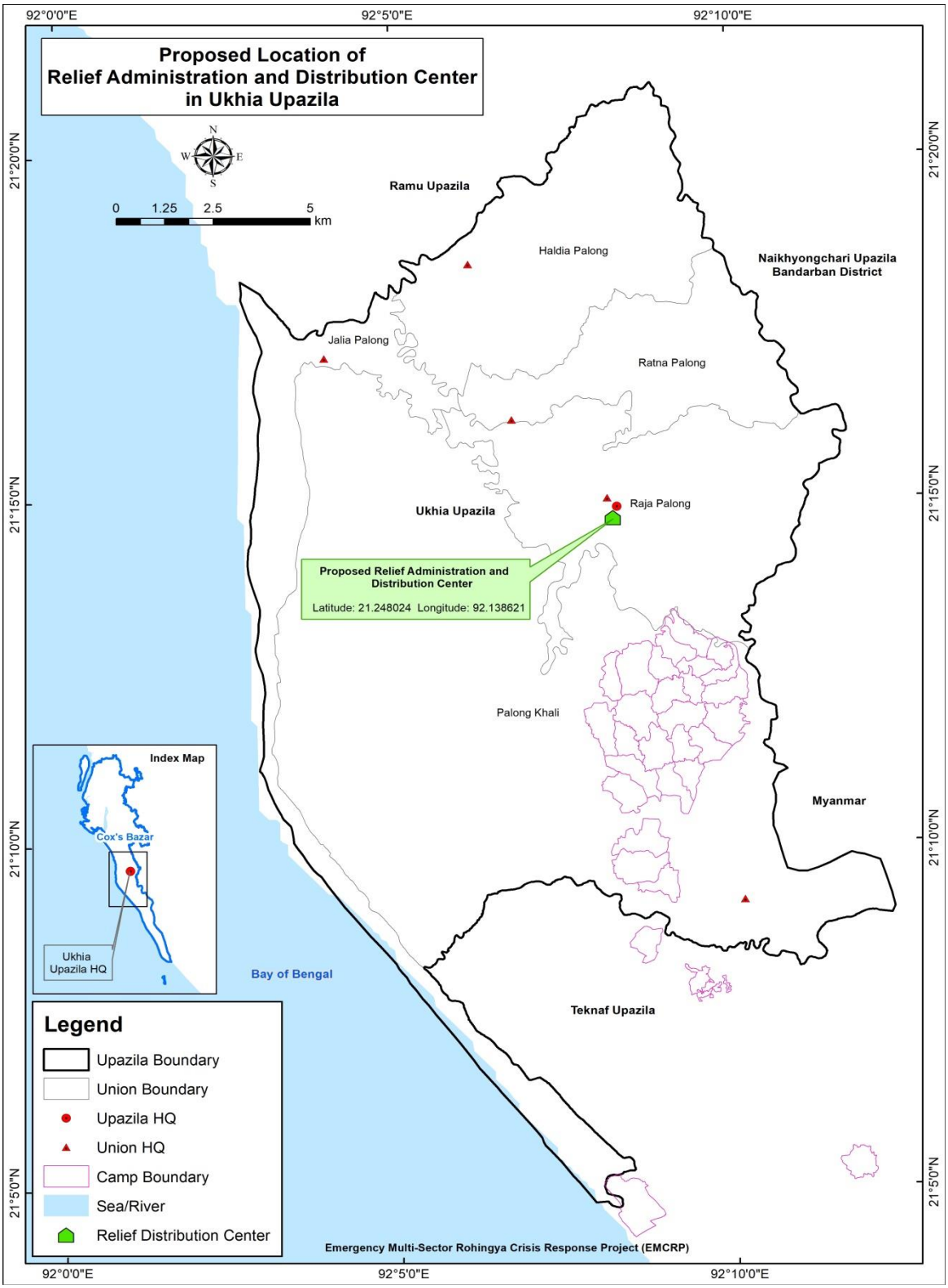


Figure 1.3.2: Upazila Map with Sub-project location

1.4 Boundary of the Sub-Project Site

The important establishments/features around the Sub-project site have been summarized in **Table 1.4.1**. Photographs showing present condition of the Sub-project area and location of construction area have been given in **Figure 1.4.1** and **1.4.2** respectively.

Table 1.4.1: Important establishments/features around the Sub-project site

Direction	Important establishment	Remarks
North side	Hill top, building	Adjacent to the Sub-project
South side	Building, open field	Adjacent to the Sub-project
East side	A 2 storied building	Adjacent to the Sub-project
West side	Upazila office	Adjacent to the Sub-project

[Sources of data: Field survey, 2019]

Figure 1.4.1: Present condition of the Sub-project area

Figure 1.4.2: Location of construction site

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. Field visit has been carried out on 29th January 2020 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area. The local individuals, Upazila Nirbahi Officer, Upazila Engineer, Upazila Sub-assistant Engineer, elites, teachers, Upazila chairman and/or member of Union Parishad participated in that consultation meeting. Refer to **Figure 2.1.1 and Appendix-5** for selected photographs of the participatory public consultation held at site of the Upazila Office and list of attendees in that public consultation meeting, respectively. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, associated social and environmental aspects.


Figure 2.1.1: Public Consultation Meeting for implementation of the proposed Sub-project

2.2 Issues Raised by the Participants

The issues raised by the participants were as follows:

- Noise and dust pollution due to the construction works, especially during the office time.
- Safety from noise and dust pollution for the office staffs and passersby during construction works.
- Need to sprinkle water during office time.
- Lack of adequate space for storage of foods and other relief stuffs.
- Inadequate toilet facilities at the construction site.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- The participants considered that the relief distribution center is very much important for the distribution of relief stuffs during disaster period, especially when the crisis becomes acute and persists for longer period of time.

- The participants have expressed their greater interest to this work.
- Office staff along with passersby's safety should be ensured by properly fencing the work sites, and the site should be equipped with necessary safety gears/first aid boxes, as required.
- They also requested to involve the local community to construction work.
- The participants assured that they would provide maintenance services on a regular basis.
- They reckoned that the selected site should be free from any events related to resettlement /relocation and will have very little or no potential environmental impacts.
- The adverse environmental impacts may only occur during the construction period, and will be of a relatively short duration and very much site specific.

3. ENVIRONMENTAL SCREENING

3.1 General

Environmental Screening is the preliminary process of Environmental Assessment for the identification of significant impacts on important environmental components, depending on the nature and size of the project, its interventions and technology, location and time; and evaluation of screening findings will decide whether any further comprehensive assessment study is required or not. This assessment procedure will follow a definite scope of interventions, for example, this particular study will be based on the qualitative assessment of the surrounding environment of the particular site before any physical intervention starts, and maximum project impact area is considered to be half a kilometer of the radial distance around the site.

This section identifies the potential impacts that the various elements of the proposed Project may have on aspects of the physical, biological and socio-economic environment. Environmental Assessment (EA) based on this screening study for the Sub-project has been conducted with the purpose of fulfilling the requirements of GoB and World Bank. Assessment of potential impacts requires a multi-disciplinary approach in which a wide range of issues are taken into consideration to identify and determine which potential Project impacts may be significant and therefore require the application of reasonable and effective management and/or mitigation.

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, an extensive field visit was carried out on 29th January 2020 in the Sub-project area. Environmental Screening form, as adopted in Appendix 2 of the Environmental and Social Management Framework of EMCRP, was administered for identifying the impacts and their extents.

The screening data and information for this Sub-project and details screening summary have been formulated and shown in Appendix-1

3.2 Assessment of Screening Findings

The proposed sub-project (Relief Administration and Distribution Center) is not located within any environmentally sensitive area and will not cause any severe negative effects to the environmental settings of the area, thus not going to create intimidation to important environmental features around. The Relief administration and distribution Center will be constructed on an existing urban site, presently occupied by Officers' Club on a government owned

land, and no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Ukhiya Upazila office is located at 50m west side of the subproject area. A water body is found at 200m southwest side and a primary school named Ukhiya Govt. Primary school is situated at 250m southeast side from the proposed sub-project area. A controlled demolition and some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small scale during the demolition and construction period. Top soil in agricultural land will be avoided without any failure in earthwork and that productive part of the soil will be conserved and replaced, if underneath soil is taken from any agricultural land. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for some impacts more likely to be generated during the pre, post and construction period. Noise pollution from pilling or drilling, air pollution caused by dust or gaseous emissions from vehicle movement, running of motorized equipment and land clearing, odors and soil pollution from leaking of latrines and fecal sludge, will more likely to take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Noise and vibration effect generated from pilling and drilling may also trigger harmful disturbances to local fauna. Impact on surface and ground water bodies might get acute due mainly to the high abstraction rate and disposal/leakage of pollutants to the surface/ground water bodies. Clearing of trees, bushes or any type of vegetation may put impact on floral species and unscrupulous clearance also trigger habitat loss.

Moreover, in order to offset the loss or attenuating the environmental degradation, a set of mitigation measures will be adopted, on top of general practice of standard construction procedure or following the relevant codes of practices.

There is no evidence of presence of elephants in the subproject area. A few incidents of human elephant conflict were reported in 2018. The IUCN has conducted a study on such type of conflict. **Appendix-4** presents a map of elephant routes of Ukhiya Upazila which is prepared by the IUCN.

3.3 Climate Change Impact Screening

3.3.1 General Climatic Consideration of the area

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.

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

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, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented.

3.3.2 Site Specific Consideration

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. Thunder storm has been seen create more damage than before. So, there is very low climate change impact at the subproject area.

Site specific climate change impacts are often not so easy to measure or deduce plausibly, and associated mitigation or offsetting measures are really hard to plot on the same tiny impact areas, though an overall set of measures are considered in practical aspect such as tree plantation etc.

4. ENVIRONMENTAL MANAGEMENTPLAN (EMP)

4.1 General

Considering the environmental settings of the sub-project area, it can be assumed that possible impacts would largely be construction-related, and could be addressed through adoption of good engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period.

Specific Environmental Management Plan (EMP) has been prepared to eliminate, reduce or regulate the adverse impacts for this subproject. The purpose of this Environmental Management Plan (EMP) is to formulate measures which will mitigate adverse impacts on various environmental components, which have been identified during observation, and protect environmental resources where possible and enhance the value of environmental and social components where possible.

The proposed Relief administration and Distribution Center will be constructed on a high land where some vegetation is found on the North West side. Due to the construction activities of this Sub-project, 2-3 nos. of trees (small and medium size) will be cut down and as a mitigation measure, 15 nos. of trees will be replanted in the periphery of the area. Further, a residential building in 20 m of the site, the office premises of the Upazila HQ and contiguous mosque at a distance of nearly 50m from the proposed site might get affected during the construction period with the generated debris and dust, though for the time being. The water body found at 200m southwest side and the Ukhiya Govt. Primary school situated at 250m southeast side of the sub-project area will mostly be free from any potential impacts, due to the presence of relatively dense and matured vegetation across the areas and favorable geographic location. However, the

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. 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. Contractor's staffs and workers will be given training on good practice construction works, health 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. With all the required efforts, once the overall effects for this proposed construction works 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 management plan has been outlined in Appendix-2. The mitigation measures as well as monitoring program of EMP have also been incorporated in the management plan.

4.2 Cost of Environmental Enhancement Works in BOQ

In consideration to the above mentioned environmental impacts and their mitigation measures for this sub-project, a set of items are included in the BOQ of this sub-project. The estimated cost to implement the EMP is shown in Appendix-3, which is nearly **05 Lacs & 37 Thousands One hundred and eighty one taka**.

5. 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 as a result of location, design, construction, and/or operation of the proposed Sub-project. There will in fact be tremendous benefits from recommended mitigation and enhancement measures and major improvements in fighting disasters, creating job opportunities and ensuring public health 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 from the improved relief storage and distribution facilities and associated infrastructure, with already improved transportation & communication system in the area.
- 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. These issues might be problematic if necessary mitigation measures, as suggested in EMP, would not be properly taken into consideration.
- The project will create employment for the workforce who live in the vicinity of the construction site and will provide them a short-term economic gain.
- The green belt development with large-growing trees at the periphery of the site will give the places a more natural and pleasing appearance.
- A comprehensive Environmental Management & Monitoring Plan (EMP) has been prepared to mitigate and reduce the adverse impacts that will come out from the Subproject

activities. The EMP mainly focuses on managing, mitigating and reducing the impacts exhibited in design, construction and operation phases.

- The tentative cost has been estimated around **05 Lacs & 37 Thousands One hundred and eighty one BDT** (Bangladeshi Taka) to implement the EMP. The detail cost estimation has been shown in **Appendix-3.** This budget can change due to change of market prices and if the project implementation period extends.

Implementation of this Sub-project will have large positive impacts to the communities in terms of fighting the grave effects of disasters commencing from the period of emergency through the immediate span of lifesaving assistance to the eventual robust recovery of the communities. 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

Environmental Screening Form

Sub-Project Description Form:

Name of Sub-Project: Relief Administration and Distribution Center in Ukhiya Upazila of Cox's Bazar District. (LGED/EMCRP-W/3)
Implementing Agency/Agencies: Local Government Engineering Department (LGED)
Estimated total cost of sub-project (in Taka): 2,00,00,000.00 Tk.
Estimated construction period duration: 24 months
Estimated Operation and Maintenance period (life of sub-project):
District: Cox's Bazar **Sub-District**: Ukhiya **Union**: Rajapalong
Name of Community/Local Area: Ukhiya Upazila office
Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): A 2 storied Relief administration and Distribution Center will be constructed with 4 floor foundation, within an existing area.
Estimated footprint / land area for this sub-project is 14000 sft
Brief description of sub-project site: (e.g. present land use, Important Environmental Features (IEFs) near site, etc.: A one-storied tin shed building is located on north side of the existing boundary. Another two storied building is located on northeast side. Upazila office is located at 50m west side of the subproject area. There is a water body found at 200m southwest side of the subproject. Ukhiya Govt. primary school is located at 250m southeast side. A 12feet BC road is passing by the subproject area.

Overall Comments
People of the subproject area are very much optimistic about the success of the project and are also eager to participate in the sub-project activities. The subproject is environmentally sustainable and socially acceptable. The local individuals, Upazila Nirbahi Officer, Upazila Engineer, Upazila Sub-assistant Engineer, elites, teachers, Upazila chairman and/or member of Union Parishad participated in a consultation meeting held on 29th January 2020. Local communities and their community leaders have no objection to the construction of this infrastructure in the proposed site. The public consultation meeting results confirmed that construction of new relief center will improve the food safety during the disaster period for the communities. They also requested to involve the local communities to the construction work.

The proposed Sub-project area is not located within any identified environmentally sensitive area, and therefore, does not seem to cause any adverse impact on the important environmental features. No significant impact is expected on the ecosystem and biodiversity, no agricultural land/ activities or fish farming will be disturbed, due to the construction of the sub projects. As the building construction work is restricted within an existing developed land area, no outside disturbing activity will be involved.

Types of waste to be generated during construction and operation phase:
During construction period solid waste will be generated due to a controlled demolition work and

different construction activities. The types of wastes are gravel, stones, rock, wood, copper wires, concrete, iron, plastic etc. Negligible amount of plastic, human wastes might be generated in labor camps.

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. Upazila office is situated at 50m west side. A water body is found at 200m southwest side. A school named Ukhiya Govt. Primary school is located at 250m southeast side but there is no chance to cause significant disturbances due to the sufficient distance in between. Ukhiya Bazar is located at 200m south side. A 12 feet BC road is passing by the subproject area. No disturbance is anticipated due to construction activities to those important environmental components. In this sub-project area, no elephant migration route exists (ref. IUCN). Elephant migration route is present nearly 14 km away from this site.

Completed environmental and social screening forms are given below

Section A: Sub-Project Overview

Description of sub-project/component interventions: A relief distribution center will be constructed on an existing developed land area, which typically be used as Officers Club. It will be a 4 floor foundation building but now being constructed up to 2nd floor. Ground floor consists of car parking (dimension: 79.5'*37') and store house (20.5'*33.4'). The 1st floor consists of 5 rooms (dimensions: 11'*13', 14'*13.2', 19.7'*16.0', 20'*11' and 20.0'*13.6'), one hall room (49.6'*19.5'), one open terrace (49.6'*19.5') and 3 toilets. The 2nd floor contains 6 rooms (30.4'*19.5', 15'*13.2', 19.7'*14.5'*20.0'*13.7', 20.0'*14.5' and23.9'*10') and one open terrace (18.11'*20.2').
Sub-project Location: The sub-project area is located in Rajapalong Union under Ukhiya Upazila of Cox's Bazar district, having an approximate geographical coordinate- 21.248024N and 92.138621 E. The distance from the Upazila headquarter is about 50 m. Nearby major road is Cox's Bazar- Teknaf highway, which is connected to the proposed site with a 12 ft. wide BC road having a distance of nearly 200m from site. **Land ownership** Government own land
Expected construction period: 24 (Twenty four) months
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:

Project intervention area will be confined within an existing developed land area occupying by the local Officers Club, but the influence area should consider nearly half a kilometer radius around the proposed site.

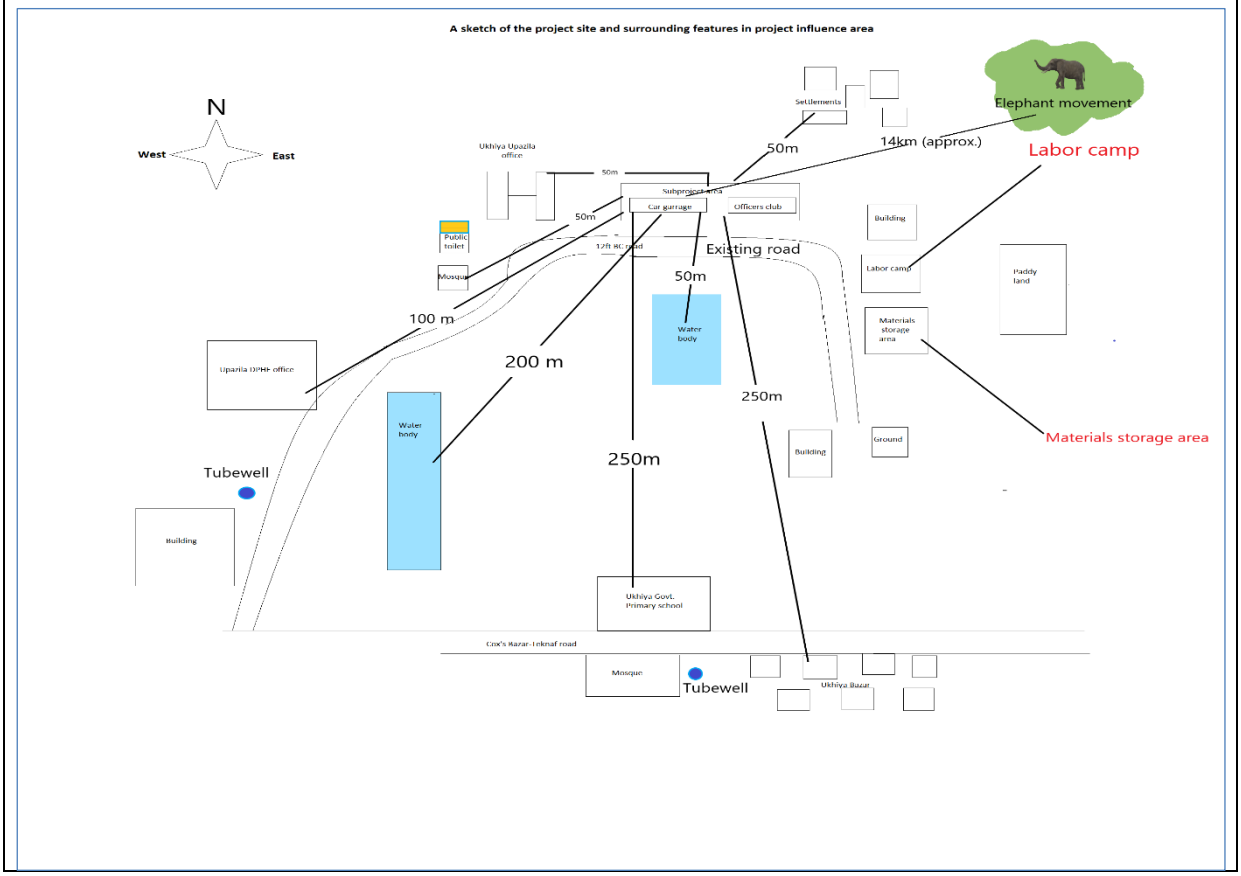
A water body is found at 200m southwest side of the sub project. Ukhiya Upazila Office is nearly adjacent to the subproject area and its distance is about 50m. A school named Ukhiya Govt. Primary school is located at 250m of the subproject. No disturbance is anticipated due to the construction activities. Ukhiya Bazar is situated at 250m south side of the subproject. A mosque is found at 50m west side but there is no scope to be affected by the construction activities. A residential building near to the proposed site will have a chance to be affected, and the residents in that building are more likely to face disturbances due to the construction works. 2-3 trees might be affected due to this construction works. No mentionable eco concerned establishment, neither any socio cultural site was found in the vicinity.

Within the influence area of the subproject no historical sites were identified. There is no evidence of presence of elephants in the subproject influence area (checked with local IUCN representative).

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 is a mosque and a primary school located within the half km of catchment area. Ukhiya Govt. Primary school is situated at 250m south side but there is no scope to be affected by the construction activities. Ukhiya Upazila Mosque is located at 50m west side but there is no scope to be affected during construction period.

There is no sensitive environmental, cultural, archaeological sites exist within the catchment area of this sub-project.

Location of environmentally important and sensitive areas:

This location is not environmentally important and sensitive. A mosque is situated at 50m west side and a big pond is found at 200m southwest side. Ukhiya primary school and Ukhiya mosque located at 250m south. The area is not a populous one. The Ukhiya Upazila HQ office premises is located within 50m distance of the proposed site and several other government offices are located at further distant places along the same road which also passes by the proposed site. So, a number of people have the usual movement on the road bound to the Upazila HQ and other offices during the working days. Additionally, several families live in a nearby two storied residential building, which pose sensitivity in terms of being disturbed or affected during the working hours for construction. Thus, the overall impacts seem to be negative but of very small scale, site-specific within a relatively small area and adjustable by mitigation measures.

(1) Within/near Elephant Migration Routes Yes/No*
There is no existence of Elephant corridor/ route now.
The elephant migration route has been checked with the assistance of maps established by UNHCR/IUCN.

(2) potential impacts on remaining forests in/around camps Yes/No
The proposed site has a good surrounding beauty of natural, relatively dense and matured vegetation. The construction works and setting up of a labor camp in nearby areas may pose a threat for 2/3 trees to be affected or uprooted. However, appropriate protective measures will be taken for avoiding such nuisance/destruction and if that happens in any way, at least three trees will be planted for each felling tree on the site as part of the compensatory measures. Sufficient budget is already allocated for this purpose.

(3) Other issues:
No more mentionable issues raised.

*This question needs to be answered by checking the elephant migration route map established by UNHCR/IUCN

Baseline air quality and noise levels:

Dust:
In the proposed site the existing air quality is almost dust free and there was no observation of any dusty and cloudy condition as a whole.

Noise: Noise in the Sub-project area is not a major concern because noise level is within the tolerance limit. The site connecting road is usually vehicle free, and only motor cycle, auto rickshaw and private cars ply the road during the working days. The highway running at nearly 200 m distant of the site is highly traffic burdened. Vehicles such as motor cycle, bus, truck, mini truck, tempo, auto rickshaw, tractor, trailer, etc. move on the road surface throughout the day and night. These vehicles generate noise, though rarely reaches the site with exceeding limit.
Baseline soil quality: The Sub-project area is located mainly in red, alluvial, muddy and sandy soil. The soils 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):** Low (the sub-project will be constructed on a plain compact land area which is already an existing developed site).
Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH): Surface water quality: A surface water body is located at a distance of 200m from the site. Though the quality was not checked during the survey works, it seemed to be quite well in appearance and free from any objectionable odors, and apparently usable for bathing and washing (people were found using the water for the same purpose!). Ground Water: Groundwater is the main source of potable water in the Sub-project area. The shallow depth is about 200 feet and deep tubewell depth is 800 feet. In the sub-project area, deep groundwater is salt and arsenic free. Shallower aquifers having depth around 100 feet surrounding the Sub-project area are full of iron. Deep groundwater table (drinkable) varies from 500-800ft (Field survey, 2019).
Status of wildlife movement: N/A (None of the information was found about the wildlife movement in or across the area)
State of forestation: The proposed site has a good surrounding beauty of natural, relatively dense and matured vegetation.
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): A 12ft BC road is passing by the south side of the sub-project. It is connected to Cox's Bazar-Teknaf highway. It is possible to carry the construction materials on the road to the construction site.
Requirement of accommodation or service amenities (toilet, water supply, electricity) to support

the workforce during construction: The existing building being used for Officers' Club has all the service facilities including toilets, water supply and electricity, and also has the capacity to accommodate numbers of people. However, a new labor camp with such facilities will be constructed for the workforce at the site (tentative place is shown in the above sketch) and sufficient budgetary allocation is included in the BOQ for this purpose.
Possible location of labor camps: On southern side of the proposed project site (after the residential building).
Requirement and type of raw materials (e.g. sand, stone, wood, etc.): i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes vii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and viii) clay are the most common type of building material used in construction.
Identification of access road for transportation (Yes/No): About 12ft. wide BC road is the main way for transportation of raw materials. It is located on south side of adjacent sub-project and connected to Cox's Bazar – Teknaf highway.
Location identification for raw material storage: On east side of project boundary.
Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.): **Solid waste:** An old tin shed building will be demolished and the new building will be constructed there. So, construction debris and other solid wastes will be generated both during the demolition and construction periods. **Type**: wood, copper wires, concrete, iron, plastic, tin, etc. **Quantity:** Nearly 15 metric ton of solid wastes including demolition materials will be produced. Managing these wastes in an environmentally acceptable manner is a must and rendered to the responsibilities of the contractor. An overview of waste management plan or approach has been delineated in appendix 2 below the ESMP table.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.): **Solid waste:** Iron, concrete, metal, drywall, wood, plastic, rubber, copper wires, excavated soils etc. **Quantity:** It is difficult to give exact figures of construction waste produced on a typical construction site. However, in order to approximate the quantity, it is estimated that nearly 10 kg of waste would be generated each working day, which are mainly construction wastes. Some plastic, paper and organic waste will be generated from the use of workers, though a very negligible amount- half a kilogram a day maximum.

Liquid waste: During construction period fecal sludge will be generated from the labor camp and the quantity would be nearly 6 kg per day, which would be reduced in weight in course of time.
Type and quantity of raw materials used (wood, bricks, cement, water, etc.): **Type:** i) Bricks, ii) Sand iii) cement iv) aggregates v) metals vi) water vii) concretes vii) Bamboo & wood from mobilized materials and other electro-mechanical equipment and viii) clay are the most common type of building material used in construction. **Quantity**: It is difficult to give an exact figure of raw materials to be used on a typical construction site. It varies with the daily type, schedule and quantity of works.
Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards: Around 14000 sqft. Soil/ land is required for the sub-project establishment. There is relatively dense vegetation around the sup-project area. The vegetation will not be affected by construction work. Due to the construction activities of this Sub-project, 2-3 trees might be cut down.
Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: **(High/Medium/Low with explanation)** **Low**: No borrow pit or quarries will be required to dig out during the construction period in or around/ adjacent to the sub-project area. During construction period one or two water reservoir may be constructed due to construction activities. But all those will completely be demolished and cleared out, once the construction period is over.
Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): **(High/Medium/Low with description)** No pre - existing drainage channel is found.
Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: **(High/Medium/Low with description)** Low: The site is free from any aquatic ecosystems or habitats of endangered species. There are some terrestrial flora species around the project site, which will not be affected by the works. Life cycle or movement of some terrestrial living species (fauna) (i.e. Insects - ant, bees, earthworm, reptiles, birds etc.) might be disturbed for the time being, but with very less impact indeed. So, overall potential effect is very low or absent for this specific sub project.
Activities that can lead to landslides, slumps, slips and other mass movements in road cuts: Vibration effects from pilling and drilling in this type of construction works in given physical settings and soil quality is expected to cause landslides and disturbances to some faunal species. However, the soil in the proposed site is already compacted and developed and the area is largely flat, so there is almost no chance to trigger the landslide, but disturbance to some faunal species for the time

being is very much possible.
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: **(High/Medium/Low with description)** N/A
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: No traffic movement impacts on light but low effects of noise and air pollution.

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

B.4: Operation Phase

Activities leading to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles: During the operation phase of this subproject, small amount of dust and exhaust gas might be produced by the vehicles bound to this center; the quantity of exhaustion is expected to be bit high only for a small period of time, when a disaster hit the area and relief storage and distribution works are intensified. So, causing any health hazards and interference of plant growth is not very likely to happen by such activities for quite a short duration.
Chance of long-term or semi-permanent destruction of soils: **(High/Medium/Low with description)** **Low.** There is no chance of long-term or semi-permanent destruction of soils during operation phase.
Possibility of odor and water, soil quality impacts from SWM and FSM disposal system: **(High/Medium/Low with description)** Low. The proposed Relief distribution center will be equipped with full facilities for accommodation, toilets (sanitary), and waste management. No fecal sludge will be produced for transferring to any disposal system. But Solid organic waste including kitchen wastes may be produced in a very small quantity, if and whenever staffs/officials live in the premises for certain time. This waste will be disposed off in a designated place away from the site and covered with soil periodically so that no odor, water and soil quality impacts are generated.
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 borrow pits, quarries, etc. during the operation phase.
Likely direct and indirect impacts on economic development in the project areas by the sub-project:

During the operation phase, this relief distribution center would have improved capacity to fight the grave disaster scenario and will play a strong role in saving people's lives from becoming dead, vulnerable and impoverished, and ultimately help them rebound their own situation by returning to the workforce within shortest time period, which eventually will have a huge impact in economic development of the project areas and the country as a whole.
Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): **(High/Medium/Low with description)** No existing drainage channels or surface water bodies were found just inside the sub-project area. A big pond or water body is found at 200m southwest side but no disturbance is anticipated due to the activities in operation phase.
Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: **(High/Medium/Low with description)** There is no protected area in or around the sub-project site, and no known areas of ecological interest.
Activities leading to landslides, slumps, slips and other mass movements in road cuts: **N/A**
Erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains: (High/Medium/Low with explanation) **N/A**
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: A BC road connects the site with main road. The road is mainly used for pedestrian access and light vehicles like bicycles, three wheelers etc. Therefore, during the operation period traffic congestion is not expected, except in the disaster period when the vehicular movement will be intensified for a shorter period of time and the said impacts will be increased to some extent. However, if not properly supervised, low effects of noise and air pollution will be occurred and accidents may occur due to unsafe driving by the drivers on this access road.

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

Section D: Environmental Screening Summary

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1.Pre-construction Phase	**Site planning** (i.e. Labor camp, construction of material storage area etc.)	Under the sub-project intervention the overall score is low.	• The construction area is on a high land. A drain is suggested at this site so that storm water may not over flow and cause erosion/disturbance to the nearby settlement (building). • Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC. • Upazila Office and a mosque are located nearby to the proposed site boundary so labor camp needs to be set up in such a location that the mosque and office are not disturbed in any way.	Contractor, environmental specialist of D&SC	Location of stockpiles and labor shed	Prior to the start of Construction works.
	Material storage area for construction (Creating dust/ air pollution, Spillage of liquid/ hazardous substances i.e. oil, paint, chemicals, bitumen etc., Risk of crime, Access of office staffs, children, passersby, etc.)	Under the sub-project intervention the overall score is low.	• The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. • Proper stockpiling/ storage of construction materials at the site proposed by the contractor & approved by the Environmental Specialist of D&SC. • Proper covering of dust producing materials with polythene sheet, • Proper fencing around the storage area in order to be secure, to minimize the risk of crime and to be safe from access by office staffs, children,	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials; protective measures incl. fencing.	During Design Stage

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			passersby, etc. • Spills/ hazardous substances should be disposed off at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Demolishing of existing structure (Generation of construction wastes, debris, dust and air pollution, noise and water pollution, ground blockage, health hazards to workers, etc.)	Under the sub-project intervention the overall score is Medium	• Water spraying at the demolition site • Fencing / Installing barriers should be shield from dust and aggregates • Avoid usage of machines/equipment with extra noise; • Do not accumulate and burn waste at the site • Carry out demolition activities in stages, give adequate notice and information of activities to the adjoining stakeholders • It needs to identify proper location to dispose solid waste from demolition and other activities in consultation with respective bodies. • Make mandatory the use of safety gears (helmets, safety belts, masks, gloves and boot) by workers depending on nature of work. • Further guidance on demolition works and wastes management is given in the appendix 2, below the ESMP table, to be followed by the contractor.	Contractor, environmental specialist of D&SC	List of selected sites; Identified sources of materials.	During Design Stage
	Setting up of labor camp(Generation of sewage waste; solid Waste; Water, soil, air	Under the sub-project intervention the overall score is	• Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental	Contractor, environmental specialist of	Complaints from community; Regular	Prior to the start of Constructi

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	& dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	low.	Specialist of D&SC. • No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. • Construction of sanitary latrine for both male and female workers and staffs. • Construction of the first tube well for drinking water and providing water filters for further ensuring access to the safe drinking water. • Provision of waste bins/ cans, where appropriate, • Litter is to be collected daily. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of D&SC. • Camp and working areas are to be kept clean and tidy at all times.	D&SC	inspection of waste management activity; Waste disposal record.	on works
	Accidents	Under the sub-project intervention the overall score is low.	• Provision of standard safety protocol. • Providing training on Environmental health and safety to the labors and associated field staffs is the responsibility of Upazila Engineer & Contractors. • Training should be scheduled twice, once before starting the construction & another in the middle of construction period. • Safety & protection gears, first aid box etc.	Contractor, environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			should be available in the site during construction period.			
2. Construction Phase	**Noise Impacts**	Under the sub-project intervention the overall score is low.	• Avoid high noise making activities during active office hours. One very effective method is to discuss with the office authority and the residents at nearby building, and settle for a time for heavy machinery usage. • Involve the community in planning the work program so that any particularly noisy or otherwise invasive activities can be scheduled to avoid sensitive times. • Avoid using of construction equipment producing excessive noise at office time & at night. • Ear protection devices for the workers & site staffs should be available in site during construction period.	Contractor, environmental specialist of D&SC	Number of complaints from stakeholders, Use of silencers in noise producing equipment and sound barriers, Noise Level following decibel meter (dB)	Daily
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related	Under the sub-project intervention the overall score is low.	• Damp down exposed soil and any sand stockpiled on site by spraying with water during dry weather. • Use tarpaulins to cover soils, sand and other loose material when transported by trucks. • Unpaved surfaces used for haulage of materials within settlements shall be maintained dust-free.	Contractor, environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints	Monthly

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	pollutants which will affect people who live and work near/at the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.		• Arrangements to control dust through provision of water sprinklers and dust extraction systems shall be provided at all stone crushers (if these establishments are being setup exclusively for the subproject). • Limiting speed of construction vehicles in work sites to maximum of 20 km/h. • Regular monitoring of air quality.		from sensitive receptors, Heavy equipment and pollution control devices, Maintain records	
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest. There are 2-3 nos. trees at the site that need to be removed.)	Under the sub-project intervention the overall score is low.	• Prohibit employees from cutting of trees for firewood. • 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&SC	If tree cutting required, to be Determined during Design stage, Numbers of complaints from sensitive receptors	Monthly
	Workers health and safety	Under the sub-project intervention the overall score is low.	• Prevent excessive noise; • Construction staff are to make use of the facilities provided for them (e.g. fires for cooking); • No fires permitted on site except if needed for the construction works; • Staff must be trained up for operating equipment, • Availability and access to first-aid equipment	Contractor, environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at	Monthly

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			and medical supplies. • Ensure the presence and use of safety gear at site: Ear protection devices, Goggles, Illuminating jackets, Masks, Gloves, Helmets, Uniforms etc., • Ensure adequate supply of drinking water. • Sanitation facilities for male & female workers separately.		project location;	
3: Post-Construction Phase	**Construction clean-up** (Damage due to debris, spoils, excess construction materials)	Under the sub-project intervention the overall score is low.	• Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; • All affected structures to be rehabilitated/compensated; • The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up; • All imported materials are to be removed and the area shall be re-vegetated as per specification that forms part of this document; • The contractor must arrange the cancellation of all temporary services;	Contractor, monitored by Consultant and PMU	Worksite is restored to original conditions; worksite cleanup is satisfactory, camp has been restored to pre project conditions.	After the completion of Works
	Odor& waste disposal	Under the issue the overall score is low.	• Use bin covers and/or tarpaulins during transport of wastes.	Contractor, monitored by Consultant and PMU	Complaints from communities	Site inspection daily / weekly basis.

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
	Vegetation	Under the issue the overall score is low.	• After construction work, all structures need to be removed and the area shall be top soiled and re-grassed using the guidelines set out in the re-vegetation specification that forms part of the bidding document.	Contractor monitored by Consultant and PMU	Worksite is restored to original conditions;	Over the completion of Works

* 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;

**Post-construction phase denotes the time period contractor use to clear and clean up the sites after the construction work is ended, perform tree plantation, grass turfing, and minor rectification till the official handing over the site to LGED, or owner of the site.

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 this Sub project (site specific)

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 for this sub-project activity so, there is no 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 on livelihoods of the people of catchment area.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Stakeholders Engagement	• All the project stakeholders will be consulted • Separate community level consultation meeting with the potentially affected HHs • Consultation meeting with nearby residents about the project objectives and scope of works • People living in nearby community will be involved with the GRM	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
Pre-Construction Stage	Loss of right to access	• In case of unavoidable circumstances, alternative access will be provided. • Access road shall be well demarcated and accessibly paved.	PIU	Social Development Specialist and Gender Specialist

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
				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	• Selected site will be far away from any water bodies or natural flow path to avoid the flash flood or any kind or surface runoff. • Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. • The existing slope and natural drainage pattern on the site should not be significantly altered. • The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.	PIU & Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Noise from construction works	• Construction activities will be finished at day time within 05 PM. Proper measures will be taken to avoid any disturbances. • All Personal Protective Equipment (PPE) will be available in site before starting any kind of construction works.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Dust	• Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM2.5, PM 10) and Hydrocarbons.	Contractor	Environmental Consultant of

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Provision of using water sprinklers to dust control. • Construction materials should be covered properly while carrying in vehicles to the site. • Vehicle movement will be controlled on haul roads/access roads for limiting dust generation.		PIU, PSC
Construction Activity	Safety Issues	• Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose. • It will be ensured that proper training and guidance are provided on general and occupational health and safety to Contractors' personnel and labors forces, and records of training sessions are to be kept on site. • All kinds of Child labor will be completely prohibited.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Traffic Management	• Contractors will discuss with traffic management authorities and take site specific traffic management measures to avoid traffic jam and any unwanted incidents or accidents.	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 will be conducted 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 undertaken before setting up bore wells. • Any type of consent letter or agreement for withdrawing water from either surface or underground sources will be	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
		kept on site. • Local community must be consulted before any construction work starts.		
Construction Activity	Increase in road accidents	• Maintain safety measures during the movement and operation of heavy machineries and equipment. • Local community will be trained up about traffic management and awareness.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Labour 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, 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	Preparation of a waste management plan covering the following aspects: • Ring slab septic tank will be installed before starting	Contractor	Environmental Consultant of PIU, PSC

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	non-hazardous waste during construction.	construction works in order to provide a better sanitation facility to the workers and staffs. • Working areas are kept clean and tidy at all times. • Construction site is to be checked for spills of substances i.e. chemical, oil, paint, etc. • Bins and/ or skips should be emptied regularly and waste/ debris should be disposed off at waste disposal areas and/ or at the site. • Hazardous waste viz. waste oil etc. will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers.		
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	• All construction equipment will be properly inspected timely. • The risk assessment will be prepared time to time for all types of work activities on site. • 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 has Proper communicative emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities' responsibilities and expertise, emergency response and evacuation procedure	PIU & 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
	and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	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. • Provision to ensure all workers exposed to a risk are		

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		aware of the possible dangers and also given thorough training on how to protect themselves and there should be effective supervision to ensure that the correct methods are being used.		
Construction Activity	Pollution of water bodies	• Contractor will ensure monitoring of nearby surface and underground water bodies for signs of contamination. Parameter include: pH, TDS, TSS, Coliforms, Pb, Cd and Hg. Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.	PIU & Contractor	Environmental Consultant, PSC.
Decommissioning during the project implementation period (including site clearance after the construction)	The impacts are similar to those listed in construction stage: • Pollution from waste materials • Health & Safety risks to workers and local communities.	• Provision to proper measure of mitigation and monitoring to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase. • Third party monitoring of air quality as well as on receiving land and water bodies, may be undertaken, if the condition of those compartments seems to be significantly worse.	PIU / Contractor	PSC. Union Member
Operation & Maintenance	Noise and vibration disturbances to fauna	• 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.	Upazila Engineer, Ukhiya Upazila, Cox's Bazar	Upazila Chairman/Upazila Nirbahi Officer (UNO)
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge, and solid waste	• Preventative maintenance schedule should be followed. • Solid organic wastes should be stored in bins and/ or skips and emptied regularly at a designated waste	Upazila Engineer, Ukhiya Upazila, Cox's Bazar	Upazila Chairman/Upazila Nirbahi Officer

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	impacting surrounding water bodies, flora and fauna	disposal area away from the 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.		(UNO)

Note: Implementation Contractor shall not be available at the site after the construction followed by necessary post-construction clearing & cleaning of sites, and the official handover of the site to the LGED. Therefore, the said contractor doesn't have involvement with any of the activities undertaken during the operation phase; neither the contractor has any responsibilities for any mismanagement, accidents or hazards occurred during that period. However, the contactor remains responsible for any construction related failure, disintegration, or breaching which may cause defects to the constructed facilities/infrastructures and incurred loss to resources and/or people; and obliged to address the defects or losses with necessary maintenance and associated measures, within the statutory defect liability period. Suggested activities in the ESMP to be followed during the operation and maintenance stage of the sub-project, as such, refers only some guidance that should be maintained by the owner/caretaking authority of the construction site/infrastructure, without the presence of any effective monitoring or controlled measures from contractor's end.

Demolition and Waste Management Plan:

The Contractor shall develop a demolition plan and 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 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.

For demolition works:

- All electric, gas, water, sewer, and other energy services or power lines shall be capped/blinded and/or otherwise cut before the commencement of demolition work;
- All asbestos, insulation materials, glass and other hazardous materials and substances shall be removed. Such materials shall not be stored within the structure to be demolished;
- Openings and weak flooring shall be prominently marked or barricaded before the commencement of demolition. Operators of machinery and equipment and workers involved in demolition work shall be informed of such hazardous location;

- Demolition work shall commence from the top of a structure and progress downward;
- Proper entrances of adequate strength to protect workers from falling materials shall be erected for access into the structure;
- The entire demolition site shall be effectively barricaded with appropriate safety signs displayed;
- The lower floor where demolition wastes are collected shall be properly barricaded and guarded to prevent materials from ricocheting and injuring workers or passer-by;
- Excessive debris shall not be allowed to accumulate inside a demolished structure. All demolition waste and debris shall be cleared from the work site on a daily basis.
- Refuse containers shall be provided at worksite for the storage of demolition wastes and debris.

For wastes and demolition debris:

- 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.
- 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.
- Hazardous waste viz. waste oil etc. will be collected and stored in a paved and bounded area and subsequently sold to authorized recyclers.
- The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in the stack yard and sold to local recyclers. Parts of construction debris (Brick, concrete and masonry) can be recycled as filling materials on the ground or be sold for using 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 disposal site, so as to cause less environmental impact.
- Other leftover non-hazardous wastes, including construction debris shall be transported to an approved disposal site by pick up tracks or back loaded vehicles with proper care.
- Organic wastes produced in the camp site 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 the construction site shall be prohibited completely.

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Appendix-3

Cost of Environmental Mitigation and Enhancement Works in BOQ

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

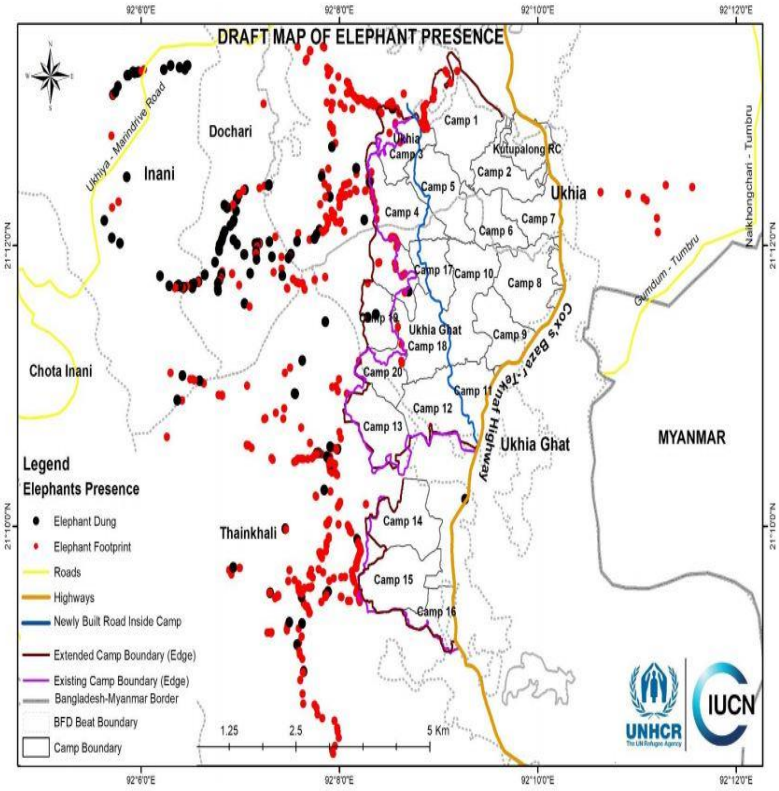
Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1.	**Grass Turfing** Turfing on embankment top and slope, building compound & 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)	875 sqm	@38.15 Tk. Per sqm	33381.25
2.	**Aid Box** Supply of first aid box with standard contents and as per direction of the E.I.C.	2 nos.	@6500 Tk. Per box	13,000
3.	**Dust suppression measures** Dust suppression measures like water sprinkling on aggregates/ unpaved roads, in and around the work site and as per direction of the E.I.C.	Each	Lump sum @ 25,000 BDT	25,000
4.	**Labor shed** Construction of working labor shed and site office with C.I. sheet roofing, Tarza fencing and brick soling floor as per requirement and direction of the E-I-C.	1	2,00,000	2,00,000

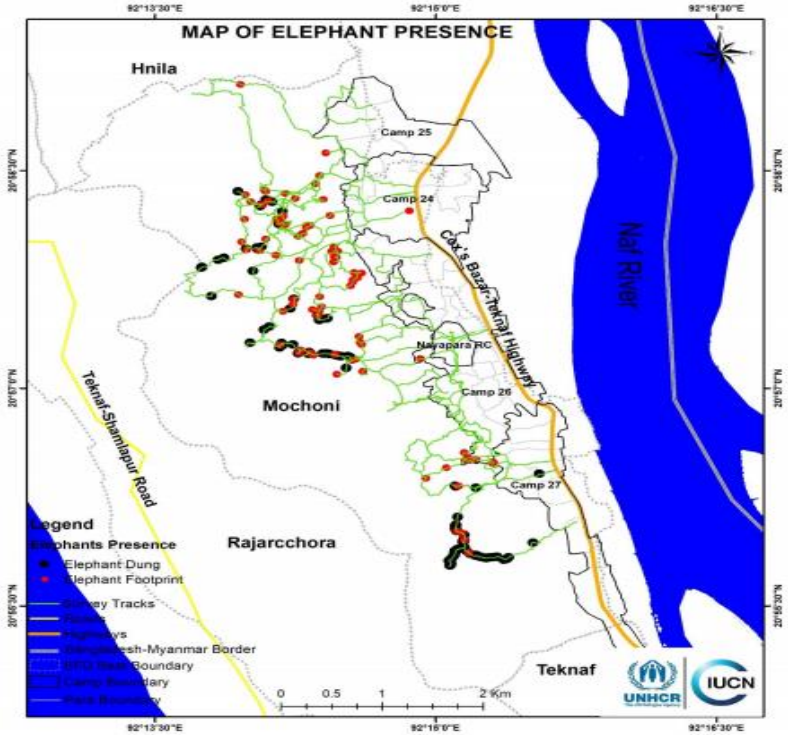
Sl no.	Description of item	Quantity	Unit price	Total amount
5.	**Health safety warning sign** Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 5000	5000
6.	**Campsite water supply facilities** Preferably 1 no. of tubewell at the labor campsite (Depending on the site condition, DSM consultant will assist the contractor for selecting the option) to the entire satisfaction of E-I-C	1	20,000 for each	20,000
7.	**Site Cleaning and preparation** Site Cleaning and preparation including providing necessary protective fencing and safety measures with sign board and removal and disposal at a safe distance etc. all complete as per direction of E.I.C.	Each	Lump sum @ 10,000	10,000
8.	**Providing Safety gear** Providing Safety gear package like hand gloves, eye protection glasses, helmets, rubber shoes, light reflecting dress etc. for 15 sets as per direction of E.I.C.	15 sets	@ Tk. 5,000 for each set	75,000
9.	**Tree plantation** Tree plantation around the shelter or road including maintenance for 2 years as per direction of E.I.C. (Coconut, Mango, Jackfruit etc. to be planted. The payment is to be made only when trees are fully grown) and as per direction of E.I.C. Total 50 nos. of trees need to be replanted around the periphery of the proposed site at an interval of 10 feet.	50 nos.	@ Tk. 1000 for each tree.	50,000

Sl no.	Description of item	Quantity	Unit price	Total amount
10.	**Temporary Sanitary Latrine** Temporary Sanitary Latrine/ Septic Tank/ Portable Toilet: 2 nos. (1 no of Toilet for female and 1 no of Toilet for male) and as per direction of E.I.C.	2 nos.	@20,000 per toilet	40,000
11.	**Waste disposal** 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.	2 nos.	@20,000 each	40,000
12.	**Water filter** Supplying of best quality **Water Filter** (32 liters) including and extra set of faucets ceramic and at least 3 sets of ceramic filters as per direction of E.I.C	3 nos.	@4000 tk for each filter	12,000
13.	**Test (Drinking Water samples)** **Water samples** are to be collected from the tubewell 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.)	Total 1 no. of sets of tests need to be conducted during construction period @Tk. 13,800.00 each set of tests (Lump Sum)	@13,800tk for each set	13,800
	Subtotal Bill: Environmental facilities			5,37,181.00

Appendix-4



Map 3: Elephant presence around Kutupalong Camp in Cox's Bazar, based on elephant signs (foot-prints and dung piles). (Data from IUCN Bangladesh's field survey conducted during 31 January-10 February 2018 and maps provided by UNHCR)



Map 2: Elephant presence, along with traversing routes, around the camps 24, 25 26 and 27, based on elephant signs - foot-prints and dung piles. (Based on data from IUCN Bangladesh's field survey conducted during 13–24 May 2018 and on maps provided by the UNHCR)

Elephant routes in subproject area as well in Ukhiya Upazila (latest information published by IUCN-10 Feb 2018 and 24 May 2018)

Elephant routes of subproject area as well as Ukhiya Upazila
(as per latest information published by IUCN)

Appendix-5

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)
Public Consultation Participants List

Time:..... Date..29:01:20

COMMUNICATION AND PARTICIPATION PROGRAMME
FOCUS GROUP DISCUSSION

ইমার্জেন্সি মাল্টি সেক্টর রোহিঙ্গা ক্রাইসিস রেসপন্স প্রোজেক্ট (ই এম সি আর পি)

প্রকল্পের নামঃ
মত বিনিময়ের স্থানঃ উখিয়া officers club, Ukhiya

ইউনিয়নঃ
ডাকঘরঃ
উপজেলাঃ Ukhiya
জেলাঃ Cox's Bazar

অংশগ্রহণকারীদের হাজিরা (পরিচয় ও স্বাক্ষর)

ক্রমিক নং	নাম	বয়স	পুরুষ/ নারী	গ্রাম	স্বাক্ষর
১।	জনাব [illegible]		পুরুষ	UNO, UKHIYA	
২।	মো: রফিউল ইসলাম	৪৪	পুরুষ	[illegible]	
৩।	[illegible]	৪৩	[illegible]	[illegible]	
৪।	[illegible]	৩০	[illegible]	[illegible]	
৫।	[illegible]	২৮	[illegible]	[illegible]	
৬	[illegible]	৩৩	পুরুষ	Eptisa	
৭	[illegible]	৪৩	পুরুষ	[illegible]	
৮	[illegible]	২৮	পুরুষ	LGED	
৯	[illegible]	২৫	পুরুষ	SAE, DPHE	
১০	[illegible]	৪০	[illegible]	OC · LSD ·	
১১	[illegible]	৬৬	পুরুষ	DAE	
১২	[illegible]	৫২	[illegible]	SAE LGED	
১৩	[illegible]	৩৫	[illegible]	UCO – EMEK	
১৪	[illegible]	৩৭	[illegible]	Auditor, UNO	
১৫	[illegible]	৫৮	[illegible]	URDO	
১৬	[illegible]	৩০	[illegible]	Upazila Electoral officer	
১৭	[illegible]	৬৩	[illegible]	Manager, Sonali Bank Ltd.	
১৮	[illegible]	৪১	পুরুষ	[illegible]	
১৯.	[illegible]	৫০	পুরুষ	UFPO, UKHIYA	
২০	[illegible]	৪৩	পুরুষ	UAO, Ukhiya	

Public Consultation Participants' List