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)

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

ENVIRONMENTAL SCREENING REPORT

Of the Sub-project:
Training Facility Construction for LGED at Cox's Bazar.
Under the Package No. EMCRP/AF/W10

Funded by:

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

Design and Supervision Consultancy:

Development Design Consultants Ltd.

September 2023

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
ESMP	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
GRM	Grievance Redress Mechanism
HBB	Herring Bone Bond
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
MPSC	Multi-purpose Community and Service Center
NDRCC	National Disaster Response Coordination Center
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 Band

Executive Summary

The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of both Forcibly Displaced Myanmar National (FDMN) and people from the host communities in Cox's Bazar District, to different hazards and improve the basic service delivery system through resilient infrastructure development and prohibiting Gender-Based violence to both the communities. 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, and financed by the World Bank.

LGED itself along with the World Bank is keen to strengthen LGED's capacity in both national and local level in order to harness the best output from every single interventions it takes across the country. Therefore, construction of a training centre of a rectangular 5-story building with spacious facilities for training & meetings, administrative works, accommodation and work-out spaces, has been planned at the north-west of the current LGED office of Cox's Bazar. As the site is proposed just next to the LGED district office and sufficient government owned land (within LGED premises) is available for the construction works, it would be highly convenient for the LGED officials to participate and conduct training programs on various relevant subjects, and relate and implement the learning outcome directly to the sites.

In assessing the impacts of construction/implementation of this training facility, it was found that the proposed sub-project (construction of Training Center) is not located within any environmentally sensitive area and will not cause any significant negative effects to the environmental settings of the area, neither to any important environmental features. Within 1 km of the proposed site, there are nothing but buildings of government and non-government organizations including several lodges and motels and few social institutions: to the north Motsho Bhaban (50m), Water Development Board Mosque (200m), Wabda Mosque (200m); to the south UNHCR Office (50m); to the east side several Households (50m), Roundabout Mosque (500m); and to the west Hotel Shoibal (30m).

During the construction period, some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale. Few disturbances to some of the nearby establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site; therefore, safety measures, such as, 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. are to be maintained. Five numbers of matured trees shall be cut down for clearing spaces for the construction works, and therefore, 25 trees will be planted around the building site after the construction works are over, as part of offsetting and enhancement measures. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from pilling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines may take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Construction works may cause high abstraction of ground water and accidental disposal/leakage of pollutants to the surface/ground water bodies may result in high impact on surface and ground water bodies.

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 engineering practices; good housekeeping; better *in-situ* construction materials management; and observance of health and safety protocols during the implementation period. As the building will be a multistoried one, slipping or falling risk for workers and structure itself are very obvious; therefore, Contractor must take adequate measures, such as, providing stable access, using safety nets and harnesses, installing edge protection, or may use prefabricated components as far as possible. 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. Any accidental leakage of chemicals or wastes to water bodies or soil may require some remediation methods which cannot be found readily available in Bangladesh and also costly to adopt; therefore, strong vigilance to working procedure and emphasis on best engineering practices (e.g., stockpiling of chemicals on impervious bunded areas, etc.) shall be adopted by the contractor. Hence, contractor shall engage an Environment & Social/ Safeguard Personnel on its own part, for the entire duration of the contract.

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. Moreover, in order to make the building visually soothing with passage of cleaner air around the compound, provision of wide green spaces in the terraces/open spaces on the 2nd floor and 4th floor has been suggested and adopted in architectural design of the building.

This training facility has been a long-desired facility for the LGED officials, and no complaints or complications have been arised so far, in relation to this specific sub-project. 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 Institution.

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 basic service delivery system even before the crisis evolved and the mass exodus of FDMN has worsened the situation further. The Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP) has been designed in order to reduce the vulnerability of both Forcibly Displaced Myanmar National (FDMN) and people from the host communities in Cox's Bazar District, to different hazards and improve the basic service delivery system through resilient infrastructure development and Prohibiting Gender-Based violence to both the communities. This project will follow a sustainable development pathway that is resilient to disaster and climate change.

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, including construction drainage facilities, 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, awareness program for sanitation as well as installing lightning protection systems, solar street lights, nano-grids, and building firefighting/search and rescue warehouses. 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 Rationale of Site Selection for Training Center under the project

The overall goal of additional financing of the project is to aid Government of Bangladesh to improve capacity of infrastructures in order to serve both FDMN and population of the hosting country in parallel. LGED itself along with the donor agency is keen to strengthen LGED's capacity in both national and local level in order to harness the best output from every single intervention across the country. This basic essence of building a better professional infrastructure of LGED has also been realized while implementing many other sub-projects at Cox's Bazar under the jurisdiction of LGED, and it's obvious that ensuring the presence of trained and quality executives is very instrumental to better implementation of quality works. Thus, building upon the available resources should be prioritized always. As Local Government Engineering Department (LGED) is responsible for the

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

implementation of a good number of projects in Cox's Bazar district, healthy supervision and execution is necessary at all levels and it is also significant to take into consideration that adept or quality people are well placed and geared for every necessary actions. In order to compliment this necessity, the additional financing has focused on facilitating corporate enrichment of LGED Cox's Bazar. This proposed component is to be established under the supervision of LGED and under the vicinity of existing Cox's Bazar LGED office in Cox's Bazar municipality area. As the site is proposed just next to the LGED district office and sufficient space is available for the construction works, it would be highly convenient for the LGED officials to participate and conduct training programs on various relevant subjects, and relate and implement the learning outcome directly to the sites. This training facility has been a long-desired facility for the LGED officials, and no complaints or complications have been arised so far, in relation to this specific sub-project.

1.3 Background of the Sub-project

EMCRP will support the Government of Bangladesh in addressing the immediate and urgent needs of the displaced people from Myanmar in Cox's Bazar, within the scope of improving access to basic services and building social service-oriented facilities of the displaced and local population.

Under the additional financing of EMCRP/AF/W10, a Training facility will be constructed under the Municipality area of Cox's Bazar Sadar Upazila in Cox's Bazar district. The catchment area of the subproject comprises the surrounding area in the municipality. Relevant significant features of the sub-project area and the building features and facilities of the proposed sub-project have been tabulated in Table 1.3.1 and 1.3.2 respectively.

Table 1.3.1: Significant features of the area and the Sub-project

Name of the sub project	LGED Training Facility
District	Cox's Bazar
Upazila	Cox's Bazar Sadar
Union/locality	Cox's Bazar Municipality
Owner of land	Government
Land Available (sq.ft.)	12,987
Structural Design Option	Rectangular shape 5-storey building with single Basement area (80 feet 7 inches X 86 feet 2 inches)
Catchment area	Cox's Bazar Municipality
Tribal people	No tribal people found in the catchment area of the Sub-project
Connecting road	Motel Road, Cox's Bazar
Land acquisition	Not required
Current land condition	The land is situated on the north-west of the current LGED office of Cox's Bazar and it is currently used as scrap yard. The location is enclosed with brick wall fencing with a small access gate to the east.

[D&SC and Field survey, 2021]

Table 1.3.2: Building features and facilities of the proposed Sub-project

Floor	Facilities	Dimensions
All Floor	Lift	8'9"x7'0"
	Stair	Single
Ground Floor	Lobby	26'6" x 17'8"
	Reception	16'2" x 16'0"
	Administrative Office	26'1"x 21'6"
	Generator Room	17'2" x 12'2"
	Store	10'6"x8'11"
	Toilet	6'6"x 5'2"; 13'8"x 12'9" (Male); 9'0"x 11'7"(Female); 10'6"x8'0" (Disabled)
	Office Space	9'8"x12'2"; 9'11"x 14'1"; 13'8"x 8'10"; 14'0"x 12'2";
	Info Desk	17'7"x 17'5"
	Car Parking	
1st Floor	Multipurpose Hall	52'2" x 34'9"
	Conference Room	26'1" x 16'8"
	Office Space	17'7" x 17'5"; 14'0"x 12'2"; 13'8"x 8'10"; 9'11"x 14'1"; 9'8"x12'2"
	Store	10'6"x8'11"
	Toilet	6'6"x 5'2"; 13'8"x 12'9" (Male); 9'0"x 11'7" (Female); 10'6"x8'0" (Disabled)
2nd Floor	Office Space	9'11"x 14'1"; 13'8"x 8'10"; 14'0"x 12'2"; 17'7" x 17'5"; 26'1"x 17'8"; 26'1"x16'10" (2 Spaces); 17'7"x 16'10"; 9'8"x12'2"
	Toilet	6'6"x 5'2"; 5'0"x 9'0" (attached-2 nos.); 13'8"x 12'9" (Male); 9'0"x 11'7" (Female); 10'6"x8'0" (Disabled)
3rd Floor	Office Space	13'8"x8'10"
	Room (Guest)	25'3"x17'1"; 25'3"x16'10" (3 nos.); 25'3"x 17'5"
	Attached Veranda	4'6"x10'0" (5 nos.)
	Dining Space	13'8"x17'1"
	Toilet	10'0"x6'0" (Attached-5 nos.); 5'0"x10'2"; 10'6"x8'0"
	Housekeeping	9'11"x14'1"
	Store	20'5"x8'11"
4th Floor	Gymnasium	26'1"x 26'10"
	Restaurant	26'1"x25'7"
	Office Space	14'0"x12'2"
	Store	13'8"x8'10"; 20'5"x8'11"
	Lounge	14'1"x17'1"
	Kitchen	9'11"x14'1"
	Changing Room	7'0"x7'4"
	Toilet	10'6"x8'0"

The objective of this Environmental Screening Report is to 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.

1.4 Location of Sub-Project

The Sub-project is located in Municipality area of Cox's Bazar District. The site location is relatively a plain land and accessible through vehicles as 25ft wide BC road is present near the site which is

connected with all major roads in the municipality area. The location details of the Sub-project have been summarized in Table 1.4.1. The District Map with project location, Location map of LGED Training Center shown in Figure 1.4.1, Figure 1.4.2 respectively.

Table 1.4.1: Location Details of the Sub-project

Division	Chattogram
District	Cox's Bazar
Upazila	Cox's Bazar Sadar
Union	Cox's Bazar Municipality
GPS position	21.43653°N and 91.97167°E
Distance from Upazila HQ	5.53 Km
Nearby major road	Motel Road, Cox's Bazar
Nearby river/canal	No mentionable feature

[Sources of data: D&SC Field survey, 2021]

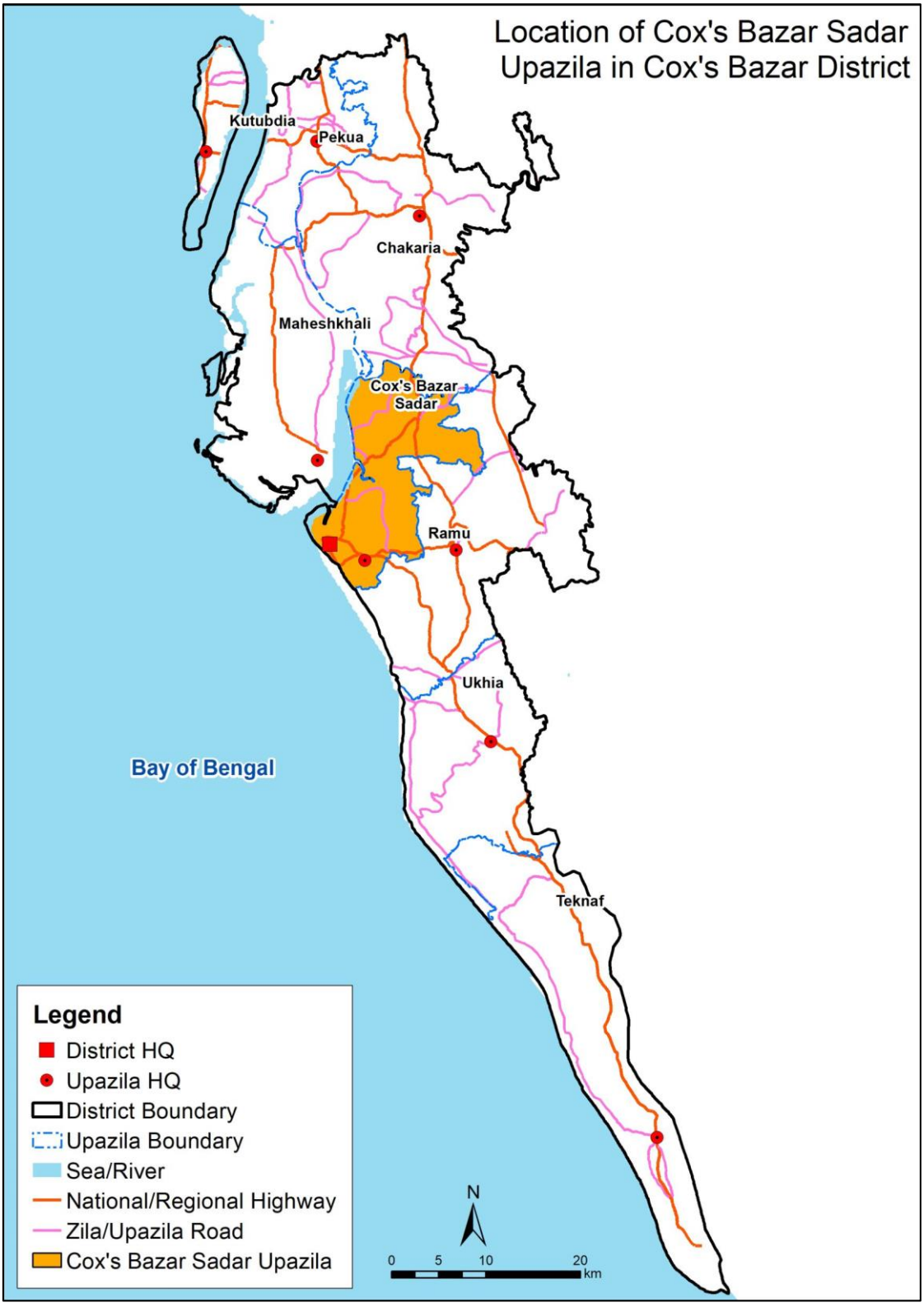


Figure 1.4.1: District Map with project location

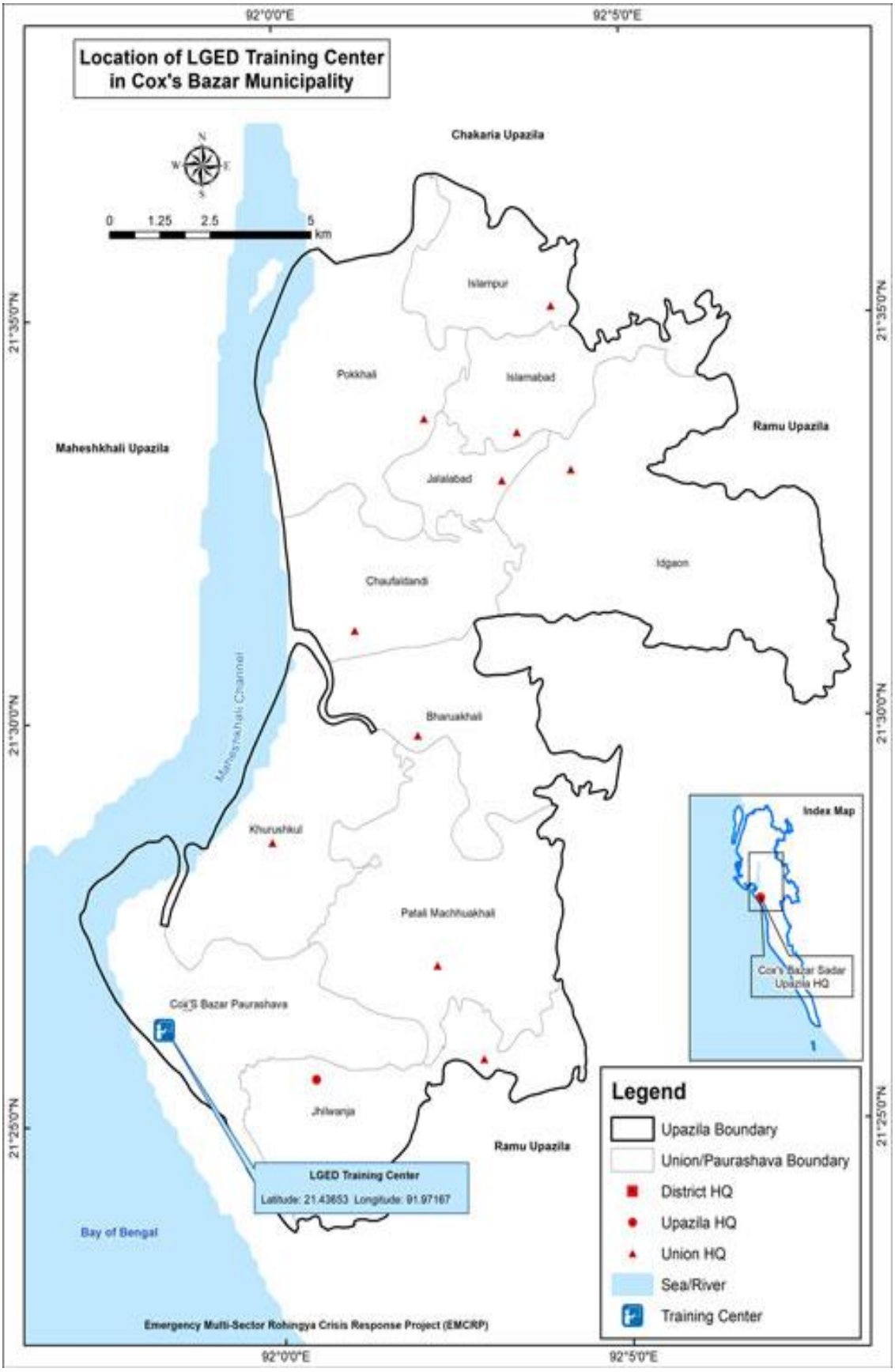


Figure 1.4.2: Location map of LGED Training Center

1.5 Boundary of the Sub-Project Site

The important features or establishments around the Sub-project site, mostly within half a km radial distance from the site which might face direct/indirect impacts from the construction works, have been summarized in Table 1.5.1. Photographs showing present condition of the Sub-project area and location of construction area are shown in Figure 1.5.1 and 1.5.2 respectively.

Table 1.5.1: Important features/establishments around the Sub-project site

Direction	Important features/ establishment (approx. distance from the proposed site)
North side	Motsho Bhaban (50m), Water Development Board Mosque (200m), Wabda Mosque (200m)
South side	UNHCR Office (50m)
East side	Households (50m), Roundabout Mosque (500m)
West side	Hotel Shoibal (30m)

[Sources of data: D&SC Field survey, 2021]

Figure 1.5.1: Present condition of the Sub-project area

Figure 1.5.2: Proposed location of LGED Training Center construction

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 07 February 2021 in and around the Sub-project site. As part of the impact assessment, participatory public consultation was conducted in that area by the field level staffs, and consultants from PIU and D&SC. The consultation meeting was attended by 12 persons, and they were all LGED officials. Therefore, the meeting was organized in an informed, expressive and unbiased manner, wherefrom different views and concerns came across which will be properly taken care of during the design and construction phases. Their concerns and comments were very critical for this intervention, and for the safeguard screening as well, since all of the items are selected for implementation within the LGED premises. The planning and adjustment which may be needed during, prior and post construction phases are to be moderated by the LGED only. This location, in particular, has no major complications and is in relevance with the current authority.

Refer to Figure 2.1.1 and Appendix-5 for selected photographs of the participatory public consultation held at site of the LGED Training facility of Cox's Bazar Municipality and list of attendees in that public consultation meeting, respectively. In addition, several walk-through informal group consultations were also held in the vicinity. A questionnaire was kept ready and responses were elicited. During these consultations, the communities were explained about the project, its benefits, and associated social and environmental aspects and possible mitigation measures.

Figure 2.1.1: Public Consultation in the Proposed Sub-project Site

As such, public consultation is a living process as the types of problems/ difficulties, involved parties or stakeholders and mode of settlement or resolution processes are more likely to 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 Issues Raised by the Participants

The issues raised by the participants were as follows:

- They are very much in need of a better facility, so that they can ensure proper training to their officials and field level staff.
- Lack of adequate spaces for conducting and organizing training, which has been realized critically after taking a good many projects in Chattogram region and in the district.
- Possible dust and noise pollution during the construction works.
- Safety of children at the sites during construction works.
- Action plan for the residing households, and executive engineer of Cox's bazar ensured that all these people found on the selected location stay there on a temporary basis. The location is basically used as a scrap yard.
- Few numbers of trees will need cutting for the construction.
- There are spaces abutting used for pedestrian pathway, which will be disturbed during the construction period.

2.3 Suggestions and recommendations of the participants

The participants presented the following suggestions and recommendations:

- The participants in the meeting have considered that the selected site is suitable for the development of Training center from both the technical and social point of view.
- The participants have expressed their greater interest for this training center for their capacity development and using this facility with highest compatibility.
- Separate male and female toilets should be present for all the best concerns.

- Internal access road must be disability inclusive. Footpaths/walkways of the internal roads must be designed in a way that wheelchairs can move smoothly.
- Public safety should be ensured by properly fencing the work sites, and workers' safety by providing necessary safety gears/first aid boxes, as required.
- They also requested to keep provision for facilities in respect to sanitation, hygiene and power supply facilities, etc., for the construction manpower.
- They have also ascertained that the selected site is free from any events related to resettlement and any significant environmental impacts.
- Adjoining pathways for pedestrian should be separated with brick wall fencing (and has been confirmed by the district Executive Engineer), and Safety practices are to be ensured so that no accident may come forth.
- The adverse environmental impacts that may come in the way of air quality, noise, solid waste, occupational health & safety during the construction period, and will persist for a short duration, yet proper management/conservative options should be adopted.

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 Environmental Assessment (EA) based on this screening study for the Sub-project, that 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, an extensive field visit was carried out on 07 February 2021 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 Major Findings

The proposed sub-project (construction of Training Center) is not located within any environmentally sensitive area and will not cause any significant negative effects to the environmental settings of the area, neither to important environmental features. The center will be constructed within selected site allocated where no agricultural land/ activities or fish farming will be disturbed due to the construction of the sub project. Some earth excavation work will be involved, so air, noise and dust pollution will be occurred within a small-scale during construction period. Top soil in agricultural land will be avoided without any failure in earthwork. Within 1 km area of the construction site some government and non-government offices, social institutions and touristic establishments are present: to the north Motsho Bhaban (50m), Water Development Board Mosque (200m), Wabda Mosque (200m); to the south UNHCR Office (50m); to the east side several Households (50m), Roundabout Mosque (500m); to the west Hotel Shoibal (30m) are located. Few disturbances to some

of these establishments/features is anticipated due to construction activities for the case of not being in a sufficient distance from the construction site; therefore, safety measures, such as, 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 et cetera are be maintained. Construction related activities and setting up of labor camps along with associated facilities and their management issues will be accounted for impacts more likely to be generated during the pre, post and construction period. Noise pollution from pilling or drilling, air pollution caused by dust and land clearing, odors and soil pollution from leaking of latrines may take place. Soil can further be eroded and polluted from chemical spills or improper disposal of waste materials. Construction works may cause high abstraction of ground water and accidental disposal/leakage of pollutants to the surface/ground water bodies may result in high Impact on surface and ground water bodies. There is no evidence of presence of elephants in the subproject area.

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.

3.3 Climate Change Impact Screening

3.3.1 General Overview 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 soil structure, not of any rocky formation and the stability comes from the roots of the trees. Also, rainfall, proximity to the sea, elevation, and land cover are very important factors for analyzing the risk of cyclone. 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, deforestation at a rapid speed uncovers the land and raise the risk of occurrence of cyclones, as forests protect land from high wind and storm surges where demolishing the trees would make the area vulnerable.

Together with the above-mentioned hazardous situation, again due to sudden extraction of huge amount of groundwater, 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.

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

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, rainwater harvesting from every disaster shelter, construction of drainage facilities along the road length and installing thunder arrester across the areas, have been suggested and will be implemented (though not in particular within this site).

3.3.2 Site Specific Screening and outcome

Climate Change impact on a particular subproject is tough to deduce as the highest resolution of climate model simulation done over Bangladesh is 50km. Depending on the simulation ensemble of Cox's Bazar district, the temperature and precipitation are likely to increase with time.

The impact of cyclone and precipitation has higher impact in this area, Intensity of precipitation has increased according to the participants and number of cyclones has been seen to have increased in the past few years. The area is free from any flash flood events and water logging is not a notable phenomenon here. Salinity has not been found in the vicinity of the subproject. Cyclonic storm surge has medium impact in the area. Temperature has increased and thus has medium impact on the area and Thunder storm has been seen to have increase and is found to have highest impact in the area. Water stagnation has not been found. Drainage channel has not been found in the area.

As compared to the entire district area or a 50km resolution for model simulation, the sub-project site is a very tiny point for impact generation, so tiny is its footprint in respect to climate change effects. Yet, to avoid the devastation caused by the growing thunderstorm events, conventional lightning protection system (copper rod to be used as a lightning arrester) will be employed to the proposed training center. Provision of green spaces in different floors for visual and ambient soothing, separate toilets for male and female, building water tank for water supply, solar power as energy sources are suggested to be incorporated in the design and to be implemented as part of the construction works of the training center. As there is very low impact of cyclonic storm surge in the area the mitigation measures for flooding potential are not provided here. As well as tree plantation is suggested to subside the effect of precipitation anomaly in the areas.

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

The proposed Training Center will be constructed on a plain land where some matured vegetation is found. Due to the construction activities of this Sub-project, 05 nos. of trees (medium sized) will be cut down and as a mitigation measure, 25 nos. of trees should be planted in the target location. Further, some settlements around the sub-project location 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 least level. Human and construction waste and debris should be stored in designated areas or dustbins, and be transported outside by the waste collection and management services provided by the municipality

for eventual management. 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. 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. 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. Any accidental leakage of chemicals or wastes to water bodies or soil may require some remediation methods which cannot be found readily available in Bangladesh and also costly to adopt; therefore, strong vigilance to working procedure and emphasis on best engineering practices (e.g., stockpiling of chemicals on impervious bunded areas, etc.) shall be adopted by the contractor. Hence, contractor shall engage an Environment & Social/ Safeguard Personnel on its own part, for the entire duration of the contract. 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 Institution.

The subproject specific environmental 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: In order to make the building visually soothing with passage of cleaner air around the compound, provision of wide green spaces in the terraces/open spaces on the 2nd floor and 4th floor has been suggested and adopted in architectural design of the building.

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 coronavirus situation. As the situation is now being normalized in Bangladesh and World Health Organization (WHO) has lifted the Public Health emergency of International Concern (PHEIC) for COVID-19 on May 05, 2023, contractor is still required to keep an eye on the situation in his working sites and associated facilities following the line of directives:

a. All workers, supervising and supporting engineers and staffs, and other concerned parties must adhere to the personal health and hygiene rules with utmost care in order to protect themselves and contain the infections, if recurs, any further.
b. 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.
c. Budgeting for suggested protective measures, along with necessary supervision and monitoring for the required interventions has to be ensured.

The additional cost to Health and Safety Measures under COVID 19 situation is shown in Appendix-3, considering the country-specific current situation, capacities, and scope of interventions.

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. Due expenditure for employing an Environment & Social/ Safeguard Personnel for ensuring proper implementation of Environmental and Social Management Works under the Package EMCRP/AF/W10 has also been added into the BOQ. The total costing and estimation have included enhancement works, such as Tree plantation initiatives, Dust Suppression mechanisms, etc. On the other hand, in order to ensure health safety and sanitation of workers PPE, First Aid Box, Labor shed, 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 host 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 the 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 Engineers' office in Cox's Bazar Sadar 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. Safeguard's 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 those 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 in 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.

6 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 office environment, opportunities for the officials/staff in getting trained up, and enhancement in ensuring quality works and project management, will be achieved once the scheme is in operation.

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

- The LGED officials (local and regional) will receive large benefits through improving office and training facilities and improved infrastructural facilities, 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, 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 both the LGED and project Officials, and surrounding communities in terms of opportunities to learn and career development, and enhancement of personal, professional and economic gain from the sub-project as per scoping differentiation. This sub-project will contribute greatly in enhancing LGED's capacity to managing projects in both efficient and economically viable way, in regional context as well as in national paradigm. 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: (AF-Fire Service)

Name of Sub-Project: Construction of LGED Training Center of Cox's Bazar District. (EMCRP/AF/W10)

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

Estimated total cost of sub-project (in Taka): 1,610 Lac BDT

Estimated construction period duration: 2 Years

Estimated Operation and Maintenance period (life of sub-project): 15 years

District: Cox's Bazar **Sub-District**: Cox's Bazar Sadar **Union**: Cox's Bazar Municipality

Name of Community/Local Area: Bazarghata, Municipality, Cox's Bazar

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.): One LGED Training Facility of 5-storey building with single Basement area will be constructed within the identified location.

Estimated footprint / land area for this sub-project is 12,987 sq. feet

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

Proposed LGED Training Center will be constructed within an identified location in the Sadar (town) area. To the north Motsho Bhaban (50m), Water Development Board Mosque (200m), Wabda Mosque (200m); to the south UNHCR Office (50m); To the east side Households (50m), Roundabout Mosque (500m); to the west Hotel Shoibal (30m) are located. Surrounding areas in the municipality of Cox's Bazar is mostly inhabited by host communities and local establishments.

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 project activities. The subproject is environmentally sustainable and socially acceptable. LGED Cox's Bazar officers, who attended in the participatory public consultation meeting, do not have any objection to the construction of this infrastructure in the proposed site; the community also appreciated the initiative of LGED as it will create some employment generation, esp. during the construction period. The public consultation meeting has confirmed that the presence of this LGED Training Center will increase the service facilities in the office premises and also the options for better equipped service delivery system from the government.

The proposed Sub-project area for the construction of LGED Training Center 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 project. As the building construction work is restricted within the predefined boundary, no outside activity will be involved.

Types of waste to be generated during construction and operation phase:
During the construction period solid waste will be generated due to construction of this building on the selected location. The types of wastes are gravel, stones, rock, wood, copper wires, iron, plastic etc. Negligible amount of plastic and 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. To the north Motsho Bhaban (50m), Water Development Board Mosque (200m), Wabda Mosque (200m); to the south UNHCR Office (50m); to the east side Households (50m), Roundabout Mosque (500m); to the west Hotel Shoibal (30m) are present in the surrounding area of this target location.

There are 5 trees on the proposed site that will need clearing and as a mitigation measure 25 numbers of trees will be replanted through the intervention efforts.

Some degree of disturbance is anticipated due to the construction activities to those components since they are located in very close proximity. In this sub-project area, no elephant migration routes exist (ref. IUCN).

Completed environmental and social screening forms are given below
Section A: Sub-Project Overview

Description of sub-project/component interventions: A LGED Training Facility Building of Rectangular shape 5-storey building with single Basement area will be constructed within the boundary of an existing Xen office area. Safe water supply will be ensured, wash facilities and green spaces will be provided. The class rooms, waiting areas, office rooms, guest rooms will be provided with furniture and other teaching tools. Floors will have mosaic finish and bathrooms have tiles for easy maintenance and cleaning. A walkway will be constructed from the entrance to the proposed building for the ease and safe passage during the rainy season.
Sub-project Location: The sub-project area is situated in Cox's Bazar municipality under Cox's Bazar district. The sub-project area is located at 21.43653° N and 91.97167° E. The distance from the Upazila headquarter is about 5.53 K m. Nearby major road is Motel Road, Cox's Bazar. **Land ownership** Land is owned by the Government.
Expected construction period: 2 Years

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 is found to be a scrap yard, but influence area should consider nearly half a kilometer radius around the proposed site.

To the north Motsho Bhaban (50m), Water Development Board Mosque (200m), Wabda Mosque (200m); to the south UNHCR Office (50m); To the east side Households (50m), Roundabout Mosque (500m); to the west Hotel Shoibal (30m) are located. However, there is no chance of causing significant disturbances during this construction activity. Few trees will be affected by this construction activity. No mentionable eco concerned establishment, neither any socio-cultural site is located nearby.

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

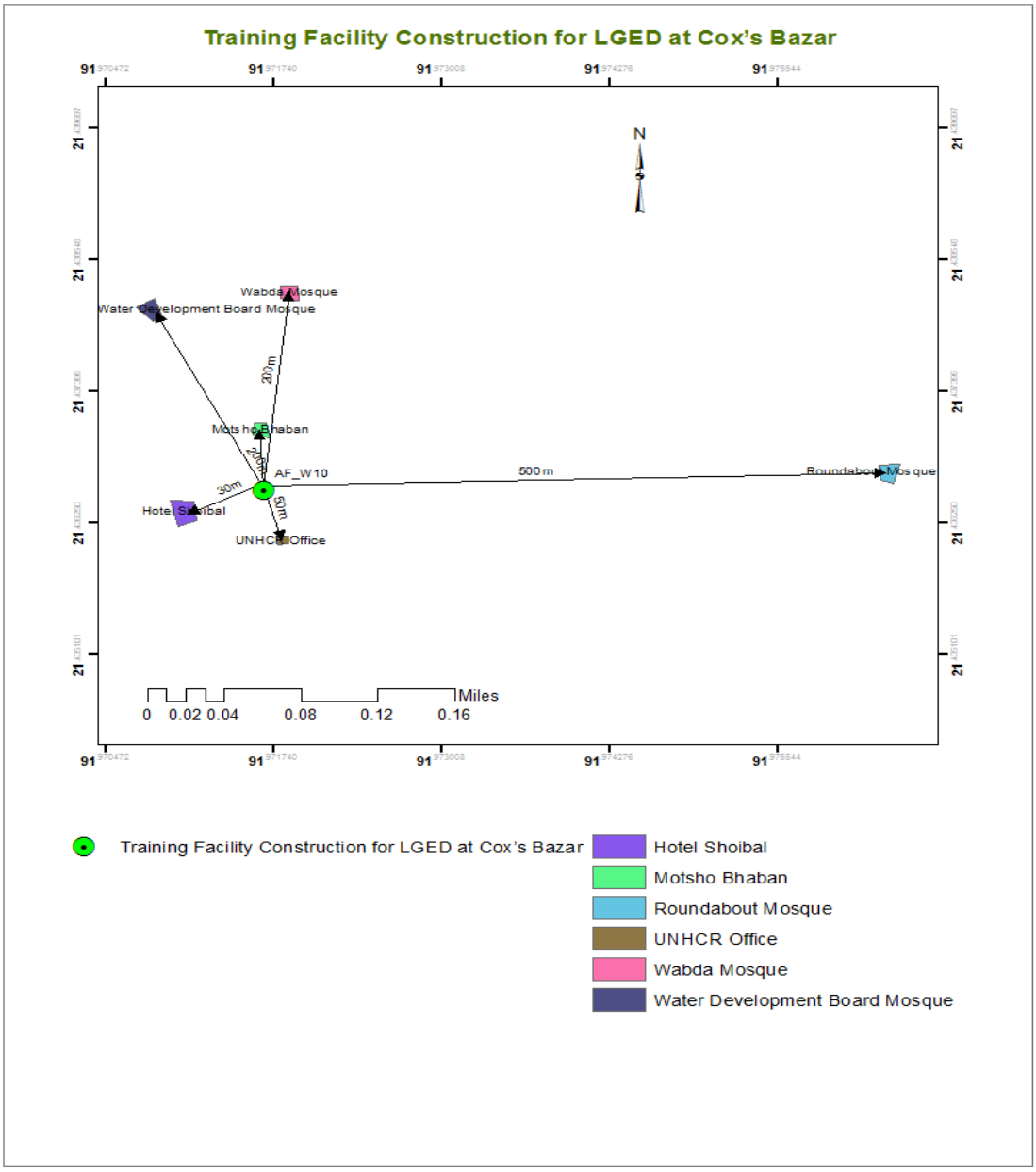
Section B: Environmental Screening

***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:

To the north Motsho Bhaban (50m), Water Development Board Mosque (200m), Wabda Mosque (200m); to the south UNHCR Office (50m); to the east side Households (50m), Roundabout Mosque (500m); to the west Hotel Shoibal (30m) are located. There are no sensitive environmental, cultural, archaeological sites exists within the catchment area of this sub-project.

A diagram showing the major features around and apparent distances (in parentheses) from the proposed construction site is given below:



Location of environmentally important and sensitive areas:

There are no environmentally important or sensitive areas found in the areas, except some matured vegetation around this location. Several mosques, markets and human settlement were found during the survey. Not more than five trees will be affected by the construction works, as the activities will be carried out within the existing selected boundary, and necessary preventive and mitigation measures will be followed during the entire construction period.

(1) Within/near Elephant Migration Routes Yes/No*

There is no existence of Elephant corridor/ route in the sub-project area, which have 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).

(2) Potential impacts on remaining forests in/around camps Yes/No

N/A (This activity will be ensured in host community and within existing LGED Xen office boundary)

(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: 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 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, motorbikes, cars, trailer, etc. moving 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 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):** N/A (the sub-project will be constructed in a plain land and within an identified LGED Xen office boundary)
Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH): Groundwater is the main source of potable water in the Sub-project area. The shallow depth is about 100 feet and deep tubewell depth is 600 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 600-800ft (Field survey, 2021). Groundwater quality: pH-5.17 to 8.51, DO-2.26 to 8.14mg/l, TDS-23.40 to 320 mg/l, EC -25.7 to 681µs/cm, Fe-0.5 to 7.0 mg/l and As-Nil (Information collected from local DPHE office during the field Survey, 2021)
Status of wildlife movement: **N/A** (None of the information was found about the wildlife movement in or across the area)
State of forestation: Few large trees are located on the proposed site.
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 BC road named Motel Road is passing by the west side of the sub-project. It is possible to carry the construction materials on this road to the construction site.
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 all the components of the sub-project, electric connection will be established with the accommodation facility due for the workforce.
Possible location of labor camps: Labor camp is not needed since local labor force will participate in the works. However, if needed this will have to be done with the consent of LGED authority, and with the supervision of the Engineer in charge.
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) 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): A BC road named Motel Road is passing by the west side of the sub-project. It is possible to carry the construction materials on this road to the construction site.
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 LGED authority. Considering the criteria, within the LGED Xen office boundary would be a good option. Material storage area must be well fenced and materials will be covered with tarpaulins.
Possible composition and quantities of wastes (Solids wastes, demolition materials, sludge from old latrines, etc.): Earth/ mud, plastics, brick chips, dust from bricks during construction of project components will be produce. Also, sludge will be produced from labor camp latrines and kitchen waste mostly composing of organic matters as fiber, starch, carbohydrates and proteins. 10% of the kitchen waste may be classified as plastics or non-biodegradables. Solid waste may amount to 10 kg daily and sludge may amount to 3 kg per day.

B.3: Construction Phase

Type and quantity of waste generated (e.g. Solids wastes, liquid wastes, etc.): Residual waste from the labor camps will be generated. Equipment maintenance/vehicles on-site and scrap material will occur during construction work which is mostly solid wastes. Leftover oils or spills from machinery can have a high probability of generating liquid waste. Waste from civil works may be produced as much as 80 kg a day.
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 are the most common type of raw materials to be used in construction period. **Quantity:** Anticipating the quantity of raw materials to be used needs detail calculation as per design, which is beyond the scope of this report, but presented in engineering design/estimates of the sub-project.
Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards: Around 12,987 sq. feet land is required for the sub-project establishment. There is reasonable vegetation around the sup-project area. The vegetation will be affected by

construction work. The open area inside the LGED Xen office boundary is clearly enough to accommodate stack/equipment yards, temporary waste dumping sites, as well as the target construction plots.
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. There are no water bodies which will be affected. Nonetheless proper construction site management practices will be required.
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: 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 or any type of mass movement of soil for the said construction works.
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 impact on light is anticipated, but low effects of noise and air pollution may appear resulting from the movement of vehicles carrying construction materials.

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 emergency cases and while passing over the adjacent road which will be low in frequency. 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) There is no chance of activities during the operation period, which can lead to any long-term or semi-permanent destruction of soils.
Possibility of odor and water, soil quality impacts from SWM and FSM disposal system:

(High/Medium/Low with description) Low. The proposed training center will be equipped with full facilities for conducting training services to LGED staffs which will include separate toilets (sanitary) for male and female, water supply and filtration, storage and other facilities. No fecal sludge will be produced for transferring to any disposal system during the operation period. Very little amount of solid waste consisting of mainly paper, plastic, polythene, and organic stuffs is likely to be produced in a typical day. All these wastes will be stored in covered plastic bins temporarily and later will be disposed off in a designated place away from the building site and any water bodies in a periodic manner so that no odor, water and soil quality impacts are generated. Plastic, polythene and other non-biodegradable wastes must be separated from the organic/ biodegradable wastes before disposing and Cox's Bazar LGED authority should be made aware of this separation and disposal procedure.
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: During the operation phase, this training center will improve the capacity of the working staffs of the institution by providing training and skill development workshops or so, and prepare them with field level knowledge and risk analysis/project management training. Further, this facility will have improved capacity to serve the institution for better and developed services for the local area improvement. Having this structure will also invite new jobs for local people to make a living.
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 are present within the sub-project boundary area, and no extent of disturbance or modification during the operation period is anticipated.
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 project sites, and no known areas of ecological interest.
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) N/A
Describe possible traffic movement impacts on (unwanted) light, noise and air pollution: The proposed site is located inside the LGED Xen office compound. A BC road connects the sites with main road. The roads are used for pedestrian access and vehicles like bicycles, motorbike, three wheelers, truck, cars etc. Therefore, during the operation period traffic congestion is expected. If not properly maintained and supervised, low effects of noise and air pollution will be occurred, primarily because of the noise and emission from vehicular movement and dust being dispersed around during the dry weather, and accidents may occur on the nearby road due to the bad condition of the access road and unsafe driving through it.

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. Sub-project Interventions	**Construction** of LGED Training Center (degradation of air, water and soil quality, and local hydrology and vegetation)	Under the sub-project intervention, the overall score is low	• Limiting earthworks; • Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; • 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 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 stack yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. • 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	Contractor, Environmental specialist of D&SC	Visual monitoring result of air quality condition, Results of water test parameters, blockage of water flow with soil, debris or stack materials at site.	Throughout the time during the construction period.

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			affect surface and ground water. • Monitor water quality according to the environmental management plan. • 5 nos. of trees falling on the path of this improvement works during site preparation, which will be compensated through plantation of 25 nos. of trees.			
2.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 plain land. The entire construction area within the selected boundary needs to be well fenced so that children, people and others could be protected from any accidental events/injuries. • Construction camp and material storage area should be located at the site & approved by the Environmental Specialist of D&SC.	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 students, children, animals, 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 procedure for stockpiling/ storage of construction materials at the site will be 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 students, children, animals, etc.	Contractor, Environmental specialist of D&SC	List of selected sites; Identified sources and storage place of materials.	During Design Stage

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			• Spills/ hazardous substances should be disposed of at the site proposed by the contractor & approved by the Environmental Specialist of D&SC to avoid soil/ water contamination.			
	Setting up of labor camp (Generation of sewage waste; solid Waste; Water, soil, air & dust pollution/ environmental pollution; health hazard of workers due to poor quality drinking water)	Under the sub-project intervention, the overall score is low.	• Construction camp should be located at a site favorable for the workers and proposed by the contractor & approved by the Environmental Specialist of D&SC. • No trees, shrubs will be removed or vegetation stripped without the prior permission of the Environmental Specialist. • Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. • Construction of sanitary latrine with septic tank 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 of at waste disposal areas and/ or at the site pre-approved by Environmental Specialist of	Contractor, Environmental specialist of D&SC	Complaints from community; Regular inspection of waste management activity; Waste disposal record.	Prior to the start of Construction works

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			D&SC. • Camp and working areas are to be kept clean and tidy at all times.			
	Accidents	Under the sub-project intervention, the overall score is Medium.	• 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. should be available in the site during construction period.	Contractor, Environmental specialist of D&SC	Complaints from community; Regular inspection of materials transport vehicles.	Before and during construction phase
3. Construction Phase	**Noise Impacts**	Under the sub-project intervention, the overall score is low.	• Avoid high noise making activities during active hours. One very effective method is to discuss with the authority 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	Weekly

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
					decibel meter (dB)	
	Air Quality Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle related pollutants which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures.	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. • 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.	Contractor, Environmental specialist of D&SC	Location of stockpiles, Covering of trucks, Records of air quality inspection, Numbers of complaints from sensitive receptors, Heavy equipment and pollution control devices, Maintain records	Monthly
	Biodiversity (There are no protected areas in or around subproject sites, and no known areas of ecological interest.)	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	Monthly

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
					from sensitive receptors	
	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 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.	Contractor, Environmental specialist of D&SC	Numbers of complaints from sensitive receptors; Number of walkways signage, and metal sheets placed at project location;	Monthly
	Accidents	During the sub-project intervention period, the overall score is Medium.	• Providing on-site training on health and safety to the labors and associated field staffs for the specific scope of works in the construction site by the Field Supervisor and Field Residential Engineer. • Training should be scheduled twice, once before starting the construction & another in the middle of construction period. • The construction being for a high storied building, height works will be predominant at	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
			the site and ensuring safety during this works is more crucial. To do so, body harness to be used by the workers during such scheduled work and training should focus on the significance and application of the gear. • In order to prevent falling from height and accident at height, provide stable access, safety nets and harnesses, install edge protection, and use prefabricated components as far as possible.			
4. **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 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	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 of	Complaints from communities	Site inspection daily /

Section	Main Environmental Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
				D&SC and PIU		weekly basis.
	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 of D&SC and PIU	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)

ESMP for Construction of LGED Training Facility (EMCRP/AF/W10): Training Facility Construction for LGED at Cox's Bazar

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 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 if necessary • Consultation meeting with the authority about the project objectives and scope of works as well as officials. • Officers representing stakeholder interest (LGED officials) will be involved with the GRM • All the stakeholders will be informed about 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 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, clearing	• 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.	PIU & Contractor	Environmental Consultant of PIU, PSC

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	vegetation.	• 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. • 5 nos. of trees will need clearing for the preparation of site for the improvement works and to compensate, 25 nos. of trees shall be replanted in the sub-project area by the contractor.		
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. • 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.	Contractor	Environmental Consultant of 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	Contractor	Environmental Consultant of PIU, PSC

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		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.		
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 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 kept on site. • LGED officials must be consulted before any construction work starts.	PIU & Contractor	Social Development Specialist and Gender Specialist of PIU, PSC
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	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	Contractor	Social Development Specialist and Gender Specialist of

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		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 wood cutting. • 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.		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: • Ring slab septic tank will be installed before starting 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 of 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.	Contractor	Environmental Consultant of PIU, PSC
Construction Activity	Health & Safety Risks: • The potential for exposure to safety events such as tripping,	• All construction equipment will be properly inspected timely. • The risk assessment will be prepared time to time for all	PIU & Contractor	Environmental Consultant as well as Social Development and

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
	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.	types of work activities on site. • Proper walkways will be prepared for office staff in existing boundary. • 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 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.		Gender Specialists of PIU, PSC

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		• Awareness training will be given to all personnel involved during the construction phase in order to highlight/make aware of the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. • 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 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. For this instance, the construction will deal with a high storied building, height works will be predominant at the site and ensuring safety during this works is more crucial. In order to prevent falling from height and accident at height, providing stable access, safety nets and harnesses, installing edge protection, and using prefabricated components as far as possible are some of the key measures that have to be adopted by the contractor.		
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.	Contractor	Environmental Consultant of PIU/D&SC, PSC

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures	Institutional Responsibilities	Supervision Responsibility
		Test results are to be compared with Bangladesh Environmental Quality Standards of DoE.		
Operation & Maintenance	Noise disturbances to fauna	• Provision to maintain noise 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.	PIU	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Odours and pollution caused by leaking latrines and faecal sludge impacting surrounding water bodies, flora and fauna	• Preventative maintenance schedule should be followed.	PIU	UNO, Upazila Chairman of Upazila Parishad
Operation & Maintenance	Maintenance of assets, properties and equipment	• Periodic maintenance of building structures, plumbing, water filtering and electric equipment has to be carried out. • Periodic cleaning and maintenance of solar panel, watering to the storage batteries and maintenance/replacing of associated equipment is to be ensured. • Water tanks should be cleaned properly at least once in a quarter.	PIU	UNO, Upazila Chairman of Upazila Parishad

Demobilization and Waste Management Plan:

The Contractor shall develop a waste management plan for various specific waste streams 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 demobilization:

- After the construction works completed, temporary establishments for that work site as labor camp, latrines and waste disposal facility are to be demobilized. While doing so, separation of joined or coupled items should be considered so that during replacements, no unwanted overhead accidents or any damage comes its way.
- Before toilets are taken care of, enveloping septic tanks must be ensured otherwise odor and chances of vector borne diseases may be induced. Moreover, inorganic chemicals as chlorine powder or bleaching agents should be applied on the surrounding facility to ensure further health safety.
- Kitchen space disassembling must be treated with same level of accuracy and caution.
- It is imperative to ensure all the moving parts should be in manageable portions with the aim that transporting vehicles can house the items safely and overhead workers do not need to take overloads.
- Vehicles should be within a close proximity so that overhead can be minimized as much as possible.
- Waste generated during demobilization should be tackled with the waste management practices preferred by this document in aspects of waste collection, separation and storing.

For wastes generated from construction and demobilization 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 with separate container which cannot be carbonized under high temperature or incidents of fire 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 for low grounds if found near the site or be sold for using as sub-base material or driveway bedding.
- All wastes generated during construction shall be disposed of in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Proper waste management chain should be maintained, in case of collected waste and debris from demobilization or construction site, separation in accordance with the type of waste must be maintained. After which all remains shall be kept in a separate location designated for the purpose of segregation and storing until transported to disposal sites allocated by the administration.

- 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: Proposed Cost of Environmental Mitigation and Healthy Safety Enhancement Works for Training Facility Building Construction

In consideration to the environmental impact's mitigation and healthy safety measures for this sub-project, the following items and cost are proposed to include in BOQ.

Cost of Environmental Enhancement Works in BOQ

Sl no.	Description of item	Quantity	Unit price	Total amount
1.	**Aid Box** Supply of first aid box with standard contents and as per direction of the E.I.C.	1 no.	@6500 Tk. Per box	6,500
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 the E.I.C.	Each	Lump sum @ 40,000 BDT	40,000
3.	**Health safety warning sign & Project Signboard** Health safety warning sign and as per direction of the E.I.C.	Each	Lump sum @ 10,000	10,000
4.	**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.	10 persons	Approx. @ Tk. 1000.per person (twice: before and after construction start)	20,000
5.	**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 @ 20,000	20,000
6.	**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	20 nos.	@ Tk. 5000	100,000

Sl no.	Description of item	Quantity	Unit price	Total amount
	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 Providing Safety gear package like hand gloves, eye protection glasses, helmets, rubber shoes, light reflecting dress etc. for 20 sets as per direction of E.I.C.			
7.	**Tree plantation** Tree plantation around the building 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 25 nos. of trees need to be replanted around the periphery of the proposed site.	25 nos.	@ Tk. 1000 for each tree.	25,000
8.	**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
9.	**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.	@10,000 each	20,000
10.	**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 nos.	LS @ Tk. 30,000	60,000

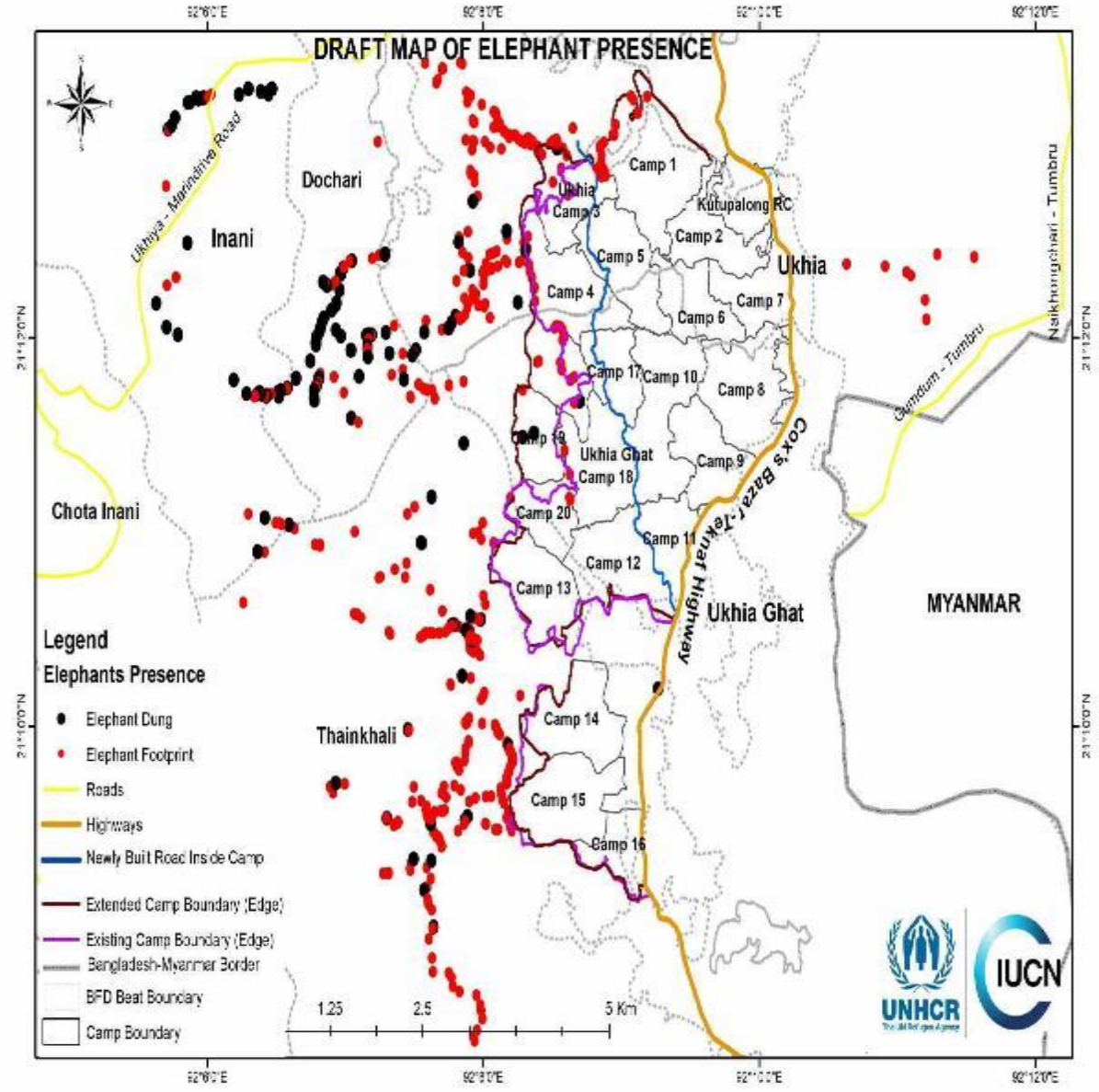
Sl no.	Description of item	Quantity	Unit price	Total amount
11.	**Water Test (Drinking Water samples)** Water samples are to be collected periodically (half yearly) from the tube well at labor shed area for laboratory analysis of different parameters such as pH, arsenic, iron, chloride, hardness, total 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. The water test is advised two (02) times to be conducted during the whole construction period (before starting the construction & after) @Tk. 6,500.00 each set of tests (Lump Sum)	2 nos.	@ Tk. 6,500	13,000
12.	**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.35000 for 24 months. (Net payment excluding Tax & VAT)	840,000
	Subtotal Bill: Environmental facilities for Training Facility Building Construction			**1,194,500**

Cost of H&S Measures under COVID 19 Situations

Considering the likelihood of COVID-19 recurring 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 20 works for 540 active working days (9 months in a year) in a contract period for one site under this package (EMCRP/AF/W10). This budget is subject to auditing by the Executive Engineer's Office before making any payment, considering the prevailing situation.

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.	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. 25 people a day and showering of 20 workers in each labor camp.
2.	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
3.	One time Mask (Disposable) for Contractors' Staffs	5 nos. each day in each site		N/A	12.00	5400	64,800.00	Reusing N95/KN95 mask will not be a manageable option in field scenario, one time disposable medical/surgery mask a good option instead.
4.	Cloth mask for Workers	N/A	20 nos. for each labor camp		35.00	720	25,200.00	A worker will use a mask for 15 days with everyday washing
5.	Floor Cleaner (1 litre Can)	1.5 Can	N/A	2 Can	250.00	3.5	875.00	
6.	Detergent Cleaner	N/A	1 kg in each camp/month		400.00	18	7,200.00	To be used for washing clothes, masks and tools & equipment, etc.
	Grand Total						**114,225.00**	

Appendix-4: Elephant Presence map for the nearby areas



Elephant presence map (latest information published by on 24 May 2018)

Appendix-5: List of attendees in the consultation meeting

Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)

[illegible]

Local Government Engineering Department (LGED)

Public Consultation Participants List

Focus Group Discussion

[illegible]: 10:30 am — [illegible]: 07/02/21

[illegible]: AF - LGED Training Building

[illegible]: LGED [illegible] (EXEN Room)

[illegible] [illegible] [illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]

Public consultation participants' list