



**Government of The People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Co-operatives
Department of Public Health Engineering (DPHE)**

**Environment and Social (E&S) Screening Report
on
Construction of BharuakhaliMini Piped Water Supply Scheme including O&M**



**Location: BahruakhaliUnion, SadarUpazila, Cox's Bazar
Sub-project: Work Package # EMCRP/AF/WD-20**

Emergency Multi-Sector Rohingya Crisis Response Project (GoB-WB)



Department of Public Health Engineering (DPHE)



Abbreviation and Acronyms:

AF	Additional Finance
BBS	Bangladesh Bureau of Statistics
BHH	Beneficiary House Hold
BD	Bangladesh
BMD	Bangladesh Meteorological Department
DC	Deputy Commissioner
DO	Dissolved Oxygen
DoF	Department of Forest
DPD	Deputy Project Director
DPHE	Department of Public Health Engineering
DRP	Displaced Rohingya Population
EC	Electrical Conductivity
EMCRP	Emergency Multi-sector Rohingya Crisis Response Project
ERP	Emergency Response Plan
ESMF	Environmental & Social Management Framework
ESMP	Environmental and Social Management Plan
FAO	Food and Agriculture Organization
FGD	Focus Group Discussion
GBV	Gender-Based Violence
GoB	Government of The People's Republic of Bangladesh
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
GPS	Global Positioning System
GW	Ground Water
HC	Host Community
HDPE	High Density Polyethylene
IEF	Important Environmental Feature
ISCG	Inter Sector Coordination Group
IUCN	International Union for Conservation of Nature
NGO	Non-Government Organization



LGED	Local Government Engineering Department
LGI	Local Government Institutes
MPWSS	Mini Piped Water Supply System
PD	Project Director
PMU	Project Implementation Unit
PM	Particulate Matter
PMU	Project Management Unit
PPE	Personal Protective Equipment
PSC	Project Steering Committee
PTW	Production Tube well
PVC	Polyvinyl Chloride
ROW	Right of Way
RRRC	Refugee Relief and Repatriation Commission
SAE	Sub-Assistant Engineer
SMC	Scheme Management Committee (MPWSS)
SW	Surface water
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
TTW	Test Tube Well
UN	United Nations
UNFPA	United Nations Fund for Population Activities
UNHCR	United Nations High Commissioner for Refugees
uPVC	Un plasticized Polyvinyl Chloride
VfM	Value for Money
WASH	Water, Sanitation and Hygiene
WB	World Bank
WDZ	Water Distribution Zone
WFP	World Food Programme
WSC	Women's Studies Center



EMCRP (DPHE part)

Environmental and Social Screening Form

Sub-Project Description Form

Introduction: Under additional financing (AF) of Emergency Multi Sector Rohingya Crisis Response Project (EMCRP) 31 nos. of MPWSS will be constructed at different locations of Host communities at Eight (08) Upazilas in Cox's Bazar district. In Sadar upazila of Cox's Bazar around 6 (six) MPWSS has been proposed to be constructed under EMCRP AFWD-20- HC, aiming to provide safe water to the doorstep of targeted local host communities.

Under EMCRP ESMF-AF, scheme wise separate E&S screening report will be prepared for Mini Piped Water Supply Scheme. Under the ESMF screening process the concerned E&S safeguard team along with local DPHE officials and LGs representatives adopted sequential screening process i.e. proposed area survey – transect walk, stakeholders & community consultation, preparing meeting resolution. Information was collected on required HH water supply coverage, water quality and availability, electricity facilities, access road, socio economic condition of the area etc. and updated screening format accordingly. As land is the most important part for the said scheme, so the required six decimals of land have been organized as per ESMF-AF) to construct five storied pump house building (PTW, scheme office, bill collection booth, reservoir solar system etc.) was duly addressed as top priority of the screening process.

This E&S screening report is prepared exclusively for the proposed Bharuakhali (ward 1, 2 & 4), MPWSS site under work package AF/WD-20 for the targeted local host community of Bharuakhali, Sadar Upazilla, Cox's Bazar District. In the proposed scheme area around 3700–4000 peoples live in around 750 - 850 households. Entire area of the scheme is about 2.00 sq.km. It is to be noted that an essential prerequisite for the scheme to have minimum 06 decimal of lands to establish PTW, Pump House, Reservoir, space for Solar panel systems etc. The local DPHE, PMU and E&S team representatives visited Bharuakhali Union Parishad Chairman, councilors and conducted several stakeholders' consultation meetings on feasibility and potentiality of this proposed MPWSS scheme over there. Through the consultation session and spot visit, water quality, scarcity, community eagerness it has been revealed that the area is quite feasible to establish the Mini Piped Water Supply scheme.

In case of required land provision, the Bharuakhali UP Chairman agreed to provide required (around six decimal) land located at North side of Sabekpara Primary (Land Ref. BS Ledger # 646; Dhag # 3631 - 3632). The required six decimals of Land (for PTW, Pump house) is presently possesses by the Bharuakhali Union Parishad, was officially and legally donated by Mr. Shajahan, S/O- Mr. Late Chorath Alam a local have dedicated to establish said sub-project MPWSS. The E&S team, Local DPHE and UP representatives have pursued with potential elites and WATSAN Committee of proposed area to be organized the required piece of land as a donation modality in favor of UP, obviously for scheme establishment. The E&S screening team have been facilitating the land allocation process following all required legal procedures as per PMU & ESMF-AF criteria regarding land issue. The UP-consent form (attached land documents as Appendix -.04) on land to provide water supply for Bharuakhali ward -1, 2 & 4 areas. The land will utilize for five-storied RCC building of MPWSS its pump house, PTW, Reservoir, bill collection booth office, Solar panel installation. To establish the scheme no significant negative impact was found as exists.

The wild life existence and their movement (like Birds, Turtle habitat, Elephant movement corridors and other wild animals etc.) were observed and found neither any negative impact on normal and natural livelihoods nor any social cohesiveness for implementation of the sub project.



Name of Sub-project:Construction of Bharuakhali Mini Piped Water Supply Scheme (MPWSS) including Operation and Maintenance under (AF/WD-20) for the local Host Community (HC) atBharuakhali(ward- 1,2&4), SadarUpazila, Cox's BazarDistrict. Noted that the sub-project going to install the pipelines under the existing ROW.

Implementing Agency/Agencies: Department of Public Health Engineering (DPHE)

Estimated total cost of eight MPWSS sub-project Work Package (in Taka):250,00,000.00

Estimated construction period duration: 12 (Twelve) months.

Estimated Operation and Maintenance (O&M) period (life of sub-project):The Scheme Management Committee (SMC), Contractor team andBharuakhali Union Parishad will responsible forOperation and Maintenance. During the project (EMCRP) period operation and maintenance will be borne by the Contractor firm and local DPHE. The water house connection holders HHs will have to pay monthly tariff (defined by SMC) which will be deposited to the scheme's account for operation & maintenance of the scheme in future (after end of the project duration. Noted that the Project Design of MPWSS lifeis more than 10 (ten) to 15 (Fifteen) years.

District:Cox's Bazar **Sub-District(Upazila):**Cox's BazarSadar **Union:** Bharuakhali

Name of Community/Local Area:Bharuakhali Baniapara, Sabekpara, Swadagorpara, Dakhin para, Chowchalapara, Chandurpara(ward # 1, 2& 4),Bharuakhali union, Sadar Upazila, Cox's Bazar District.

Description of proposed sub-project activities (incl. type of activities, footprint area, natural resources required, etc.):

In the proposedsub-project area of BharuakhaliMini Piped Water Supply Scheme (MPWSS) activitiesfollowing interventions would be taken place:

- One Exploratory drilling & Test Tubewell (TTW)
- Installation of one Production Tubewell (PTW)
- One set solar panel Installation (Pump house Roof Top based)
- Five - storied (RCC) Pump House, office cum store, water reservoir construction(TheOHS management and labor influx have discussed in details at social screening section)
- One Submersible pump Installation
- Roof top based RCC water reservoir tank (70,000 Lit) Installation
- Iron removal Plant (if need)
- HDPE pipe networking
- Community house level water collection points, etc.

Estimated footprint / land area for this sub-project:Peoplearound2.00 sq. km(Water Distribution area) of the project area will be benefitted through implementing the scheme.In order to construct different components of the scheme approx. 12,500 square meters' landwill be required. Under the scheme area around750-850 nos. of doorstep house connection will be provided through constructionof around5,000-meter transmission and distribution pipeline for water supply networking system. As per the ESMF-AF E&S screening process the figure of water tank and tap stand is estimated but not completelysurveyed.

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

Bharuakhali (ward #1,2&4) entire scheme area is observed as adenselyhabitathost communities with different religions and ethnicity.Most of the household pattern ofthe scheme area were found densely while some scatteredhouseholds were found. It is revealed that, in the proposed areas both densely & scattered inhabitant will be benefitted from the proposed MPWSSterritory. At



present the local HC local people meets up their daily safe water requirement from hand tube wells (shallow/ deep) is iron contaminated water mostly.

Noted that an essential prerequisite for the scheme to have minimum 06 decimal of lands to establish PTW, Pump House, Bill collection booth, Reservoir, space for Solar panel systems etc. The local DPHE, PMU E&S team representatives visited Bharuakhali Union Parishad and **two (02) consultation** meetings conducted with UP Chairman, councilors and Local Elite personals on feasibility and potentiality of this proposed MPWSS scheme over there. Through the consultation and discussion session and proposed spot visit, it has been revealed that the area is quite feasible to establish the Mini Piped Water Supply scheme. In case of required land provision, the UP Chairman agreed to provide required land located at Sabekpara area (Land Ref. BS Ledger # 646; Dhag # 3631 - 3632) of Bharuakhali union. The required six decimals of Land (for PTW, Pump house) is presently possesses by the Bharuakhali Union Parishad, was officially and legally donated by Mr. Shajahan, S/O- Mr.Late Chorath Alam local elite have dedicated to establish said sub-project MPWSS. The required land issue processing was completed as per EMCRP ESMF-AF and formal system. The E&S Safeguard team adopt the formal land using permission process by the UP authority to provide water supply for Islamabad (ward 1,2 & 4), areas MPWSS its pump house, PTW, Reservoir and Solar panel setting and installation. To establish the scheme no significant negative impact was found as exist.

Major institutions, infrastructures, Forest land existence: At the proposed areas of MPWSS sub-project exists Mosques-03, Madrasha -04, Primary School -01, College-01, Local Bazar-01, Grocery shop, Union parishad complex etc. were found in the scheme area. Apart from this, also found some natural forest land, BHH habitat, culvert and pucca road.

Existing Population of the scheme area is respectively around 9000 (Nine Thousand). There is exists herringbone bond road (12-15 ft. width) and 3 phased electric line very close to the proposed sub-project pump house area. No important Environmental Features (IEFs) were found near to the scheme site. No existing trees, bushes, shelters, wild animal – insect habitat or structures will be affected or removed for implementing of the project.

Overall summary:

The targeted local host community (HC) people of the sub-project area are very much optimistic about the success of the MPWSS sub-project. The sub-project is environmentally sustainable and socially acceptable. The local DPHE, along with PMU Social & Environmental Consultant has conducted 02 (two) numbers of consultations with host communities and their community representative, WATSAN committee, DPHE SAE & Mechanic, and relevant stakeholders. The outcome of the consultation meeting was approval for the construction of the Mini Piped Water Supply scheme. During the discussion the participants also requested to involve the local community during the construction- installation work.

In terms of natural, ecological features of the area, it was observed that the territory is surrounded by some low dense scattered forest area. No further significant impact is expected on the ecosystem and biodiversity. There is agricultural land/ activities or fish farming, turtle, birds and other wild animals' habitat will not be disturbed, due to the establishment of the MPWSS sub-projects. The said scheme construction work would be completely restricted to within the compound of Sabekpara area (Land Ref. BS Ledger # 646; Dhag # 3631 - 3632) premises, Bharuakhali.

Sub-project site selection process:

The E&S team and local DPHE representatives, along with LGIs have conducted details feasibility survey through transect walk, FGD, and series of consultation sessions with stakeholders and local targeted communities. The Environmental and Social Consultants of PMU engaged for the Scheme, local DPHE Officials along with LGI- UP representatives have visited the proposed area recurrently (Bharuakhali) to conduct the MPWSS sub-project screening



process. The team primarily selected the land and location of scheme to construct TTW, PTW, Pipe Line (5000 meter), Pump House, Iron Removal Plant (if need), Solar panel, Water Reservoir and allied establishments, etc.

The major site selection criterion is obviously host community area under Cox's Bazar, safe water scarcity territory, ambient GW quality in respect of Fe, As, soil topography, salinity (content & dose illustrated at environmental screening section), targeted population minimum 2500, availability of 6 decimal of land (freely donated by someone or institutions in favor of the scheme management committee. The site selection has been accomplished following existing site selection criteria of the Government (DPHE). Representative of mass people (irrespective of religion, income level, education, profession, caste etc.) Union parishad, concerned WATSAN committee members, local elites etc. participated in the process along with technical support of local DPHE.

Bharuakhali MPWS Scheme Management and WATSAN Committee is the scheme operating focal agency, and DPHE is implementing the Project with the financial assistance of The World Bank and The Government of Bangladesh. After establishing the proposed Mini Piped Water Supply Scheme in the area about 4000-5000 people will be benefitted through meet their safe water requirements.

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

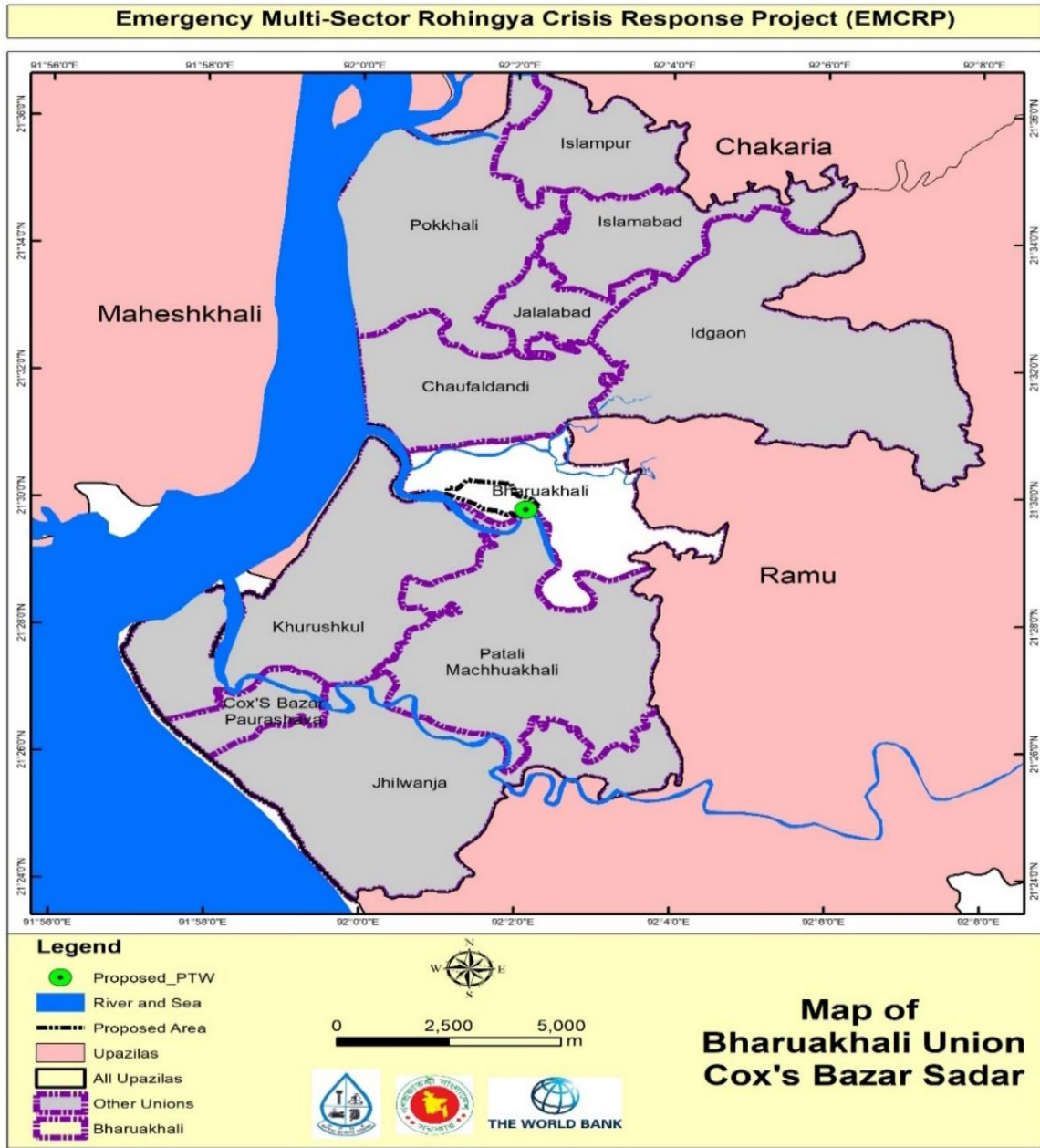
During construction phase solid and liquid wastes will be generated due to construction activities. The type of wastes is uPVC pipe, HDPE pipe, concrete, iron, earth, liquid drilling, lubricants, chemicals and etc.

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

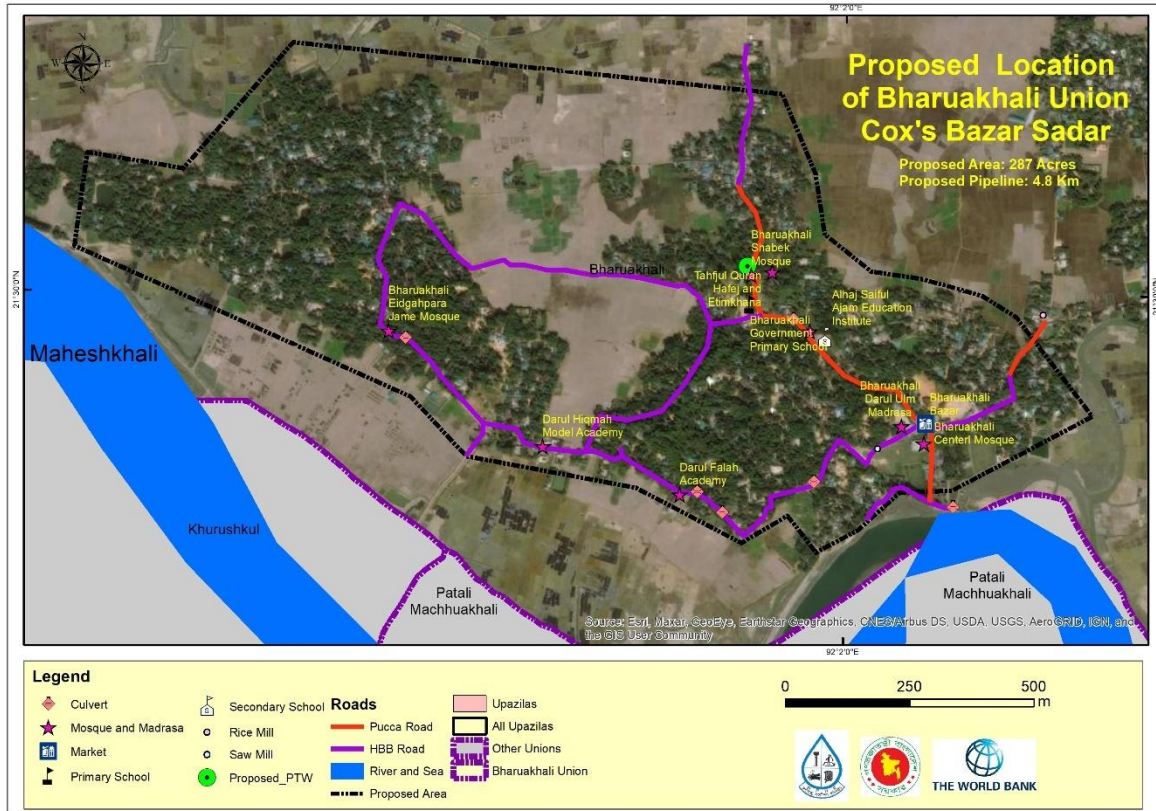
At the proposed areas of MPWSS sub-project exists Mosques-03, Madrasha -04, Primary School -01, College-01, Local Bazar-01, Grocery shop, Union Parishad complex etc. were found in the scheme area. Apart from this, observed HBB, RCC Pucca road and culvert at proposed sites. Noted that, there is no any possibilities to create any traffic during the construction period which may affect this community properties However, none is going to be affected due to project intervention. No significant environmental or social disturbance is anticipated due to construction activities. In this scheme area, no elephant migration routes exist (*ref. IUCN 2016 map-03*).



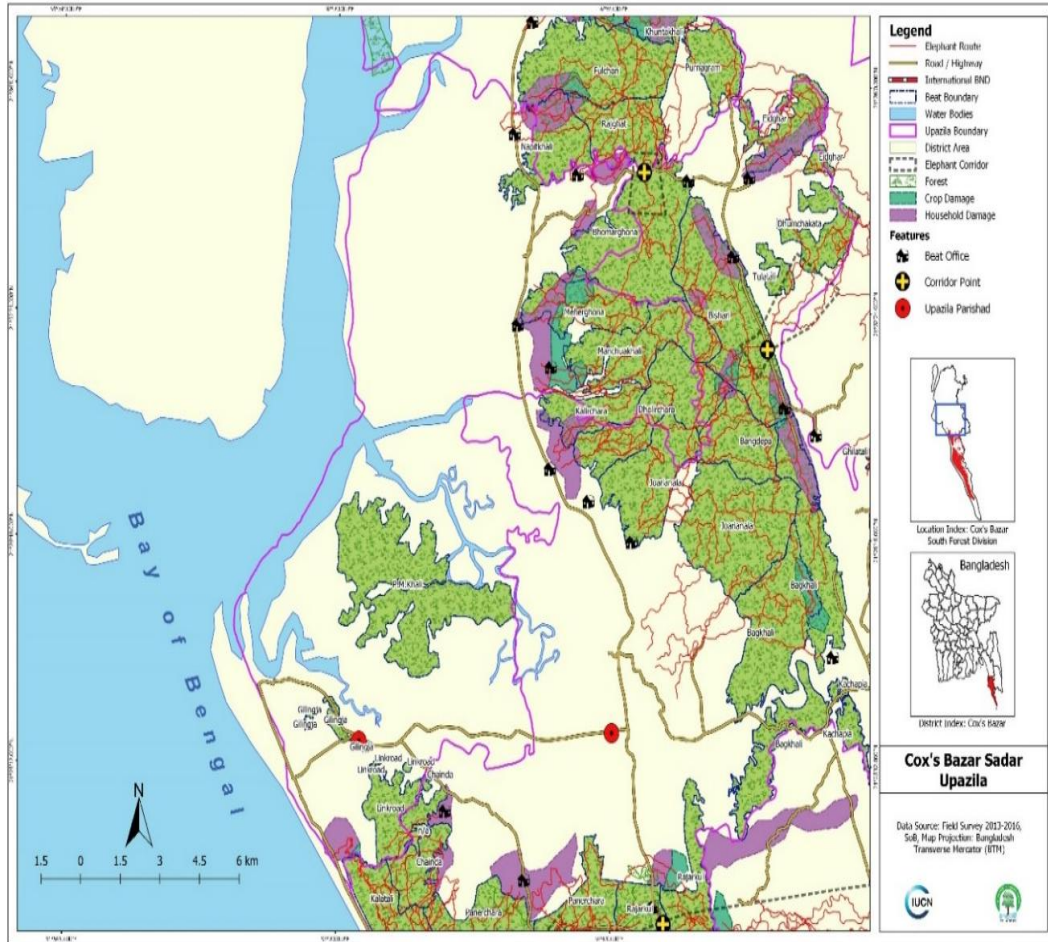
Figure 01: Proposed sites location of Bharuakhali MPWSS PTW & Pump house, Pipeline construction



Map_01: Proposed location Map of Bharuakhali Union, Sadar, Cox's Bazar



Map_02: Proposed location Map for MPWSS (PTW & Pump House) at Bharuakhali Union



Map-3: Elephant Presence in Cox's Bazar Sadar upazila area (Source: IUCN 2016 report)



Work Package:AF/WD-20 (Mini Piped Water Supply Scheme)

Environmental and Social Screening Form

Section A: Sub-Project Overview

Description of sub-project/component interventions:

- One Exploratory drilling & Test Tubewell (TTW)
- Installation of one Production Tubewell (PTW)
- One set solar panel Installation (Pump house Roof Top based)
- Six - storied (RCC) Pump House, office cum store, water reservoir construction
- One Submersible pump Installation
- Iron removal Plant (if need)
- Roof top based RCC water reservoir tank(70000 Lit)Installation
- HDPE pipe networking
- Community house level water collection points, etc.

Sub-project Location:

This MPWSS sub-project area is situated at Sabekparaarea (Land Ref. BS Ledger # 646; Dhag # 3631 - 3632) of Bharuakhali union (ward # 01,02 &04) and the proposed land is legally owned by the Bharuakhali union parished. This selected land is plain and close to the exists herringbone bond road (12-15 ft. width).

Land ownership:

The required six decimals of Land (for PTW, Pump house) is presently possesses by the Bharuakhali Union Parished, was officially and legally donated by Mr. Shajahan, S/O- Mr.Late Chorath Alama local elite have dedicated to establish said sub-project MPWSS. The required land issue processing was completed as per EMCRP ESMF-AF and formal system of UP owned (Government) land. Noted that an official land use permission/allocation related resolution has been accomplished by the UP authorities and Union WATSAN committee (attached ***the consent form resolution***).

Expected construction period:12 (Twelve) months.

Description of project intervention area and project influence area with schematic diagram(where relevant, indicate distance to sensitive environmental areas such as elephant corridors, water bodies, etc. and historical or socio-cultural assets):



- i) Adjacent of the scheme site under the project intervention area: (ward 01, 02 & 04). Bharuakhali Union, Sadar Upazila, Cox's Bazar district.
- ii) Impacted area: approx. 25,000 sq. meter (625 decimal), no structures, trees and livelihood will be affected.
- iii) Host community owned structures, habitat relocation is not required.
- iv) Influence area: is within the scheme area of 50,000 sq. meter (Map-02)
- v) Environmental sensitivity: Within the influence area of the sub-project no historical sites were identified. There is no evidence of presence of wild animals (elephants), turtle, birds in the sub-project influence area (checked with local IUCN representative).

Section B: Environmental Screening

B.1: Environmental feature of sub-project location

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

At the proposed areas of MPWSS sub-project exists Mosques-03, Madrasha -04, Primary School -01, College-01, Local Bazar-01, Grocery shop, Union parished complex etc. were found in the scheme area. Apart from this, also found some natural forest land, BHH, culvert and pucca road. This selected land is almost plain and close to the LGED – UP HBB and pucca road is existing close to the scheme area. However, none is going to be affected due to project intervention. No significant environmental or social disturbance is anticipated due to construction activities. In this scheme area, no wild animals (elephant), birds, turtle migration, habitat routes exist. However, none is going to be affected due to project intervention within 1-2 km from proposed scheme site. No significant environmental or social disturbance is anticipated due to construction activities.

Location of environmentally important and sensitive areas:

This location is environmentally important. Erosion/land slide may occur if highly sloping terrains would be constructed for production well, pump house and pipes line construction. The impacts are negative but very small scale, site-specific within a relatively small area is adjustable by mitigation measures.

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

No. According to UNHCR/IUCN prepared elephant migration route map (map attached), at present there is no Elephant corridor/ route due to deforestation.

(2) Potential impacts on remaining forests in/around unions Yes/No*:

No. At present the area has no natural forest. Some plantation is seen under newly started forestation activities of different organizations.

(3) Other issues:

No more mentionable issues raised



Dust:

Ambient air quality data was not readily available. In the proposed site the existing air quality is almost dust free except for few months in the dry season (November to March).

Noise:

Noise in the Sub-project area is not a major concern based on the consultations. Noise is originating from communication among the host community, service providers.

Baseline soil quality:

The soils of the region in particular the hills are mostly composed of coarse materials and is less mature than other coastal region of the country and are susceptible to erosion and landslides. The region has a long history of landslides. The soils range from clay to clayey loam on level ground and from sandy loam to coarse sand on hilly land. In the forest areas, the clayey and sandy loams are fertile, and the sandy soil is often infused with iron resulting in red or yellowish tinge. The hilly soils developed from un-consolidated rocks are moderately well to excessively well drained, generally deep, and probably the oldest soils in this region, while those occurring on hills from consolidated rocks tend to be formed in weathered sandstones, shales, and siltstones. The soils developing from the weathered sandstones tend to be sandy loams to clay loams, and those in shales silty clay loams. Generally, the soils of Tipam and Surma formations are less acidic in reaction relative to the soils of Dupitila formations.

Landslide potential:

(high/medium/low, with explanation):

Low. Potential Erosion/land slide may occur if highly sloping terrains would be constructed for production well, pump house and pipes line construction. The impacts are negative but very small scale, site-specific within a relatively small area and to minimize by the necessary mitigation measures as per ESMF.

Baseline surface water and groundwater quality (FE, TDS, fecal coliform, pH):

Surface water quality:

No surface waters.

Groundwater quality:

Groundwater is the main source of potable water in the Sub-project area. The shallow depth is about 130 feet and deep tube well depth is 820ft to 920 ft. In the sub-project area, groundwater is free of saline and arsenic. Shallow tube well of surrounding the sub-project area are iron concentration is little high. pH_7.0 to 8.00, TDS_22.40 to 350 mg/l, EC_25.7 to 450µs/cm, Fe_0.05-6.20mg/l, Mn_0.05-1.20mg/l, Chloride_10-380mg/l, and As Nil to 0.001 mg/l. (Tube well depth: 820ft. to 920ft.) Many shallow tube wells have been installed in the union area. Excessive withdrawals of water from the shallow aquifer resulted drying up the wells at dry season.



*Data source: Secondary data and field survey

Status of wildlife movement:

This selected land is almost plain and close to the LGED – UP HBB and pucca road is existing close to the scheme area. It has been observed that, within Bharuakhali Union (ward 1,2 &4), Sadar Upazila, Cox’s Bazar area, there was no significant wildlife. i.e. Wild animals, turtles, birds, etc. habitat, movement and elephant migration route as per UNHCR-IUCN map.

State of forestation:

It has been observed that, at the proposed areas and surrounding locations some scattered natural forest exists. But man-made tree plantation is covered the targeted HC habitats presents over there.

Summary of water balance analysis (For water supply scheme only):

Please consider (i) water requirements of newly forested areas for plants' total evapo-transpiration, (ii) new settlements water supply requirement for drinking water, household use, bathing and sanitation, (iii) replenishment rate from annual rainfall etc.

- i) In the sub-project area, some new plantation has been done by local people and forest department.
- ii) 70 liters/person/day water will be allocated to local targeted community people for drinking water, household use, bathing and sanitation. Therefore, daily approx. 280,000—350,000-liter water will be required to serve 4000-5000 nos. of beneficiaries (estimated).
- iii) The average Annual rainfall in Cox’s Bazaar 3,524.1mm, average relative humidity 80%. Record high temperature was 37.2°C and low was 7.8°C (Data source BMD & BBS)

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):

Pucca Road is very close to the north side of proposed PTW & Pump house construction location. Other than that, herringbone bond, pucca, earth road runs by the sub-project area which is the most feasible way of carrying construction materials (pipes, rigs, bamboo, bricks, cement, rods, gravel, overhead tank, wooden frame and bentonite sacks, etc.) to the construction site.

Requirement of accommodation or service amenities (toilet, water supply, electricity) to support the work force during construction:

Prior to commencement of construction work, contractor will arrange accommodation facilities with toilet, water supply, electricity for the associates' working personnel. If there are women labor proper lighting facilities should arrange (during night time), by using solar light, charger light, etc. If there are women with children, then contractor will arrange child care space in the construction site. Noted that there is plan for need based a child-care space in the construction site for women worker over there. It might be great if a private place (using curtains or whatever is feasible) can be arranged in the child space if any worker needs to breastfeed her child.

Possible location of labor camp:

Within the scheme area and very close to the sub-project sites.



<p>Requirement and type of raw materials (e.g., sand, stone, wood, etc.):</p> <p>i) Bricks, ii) Sand iii) Cement iv) uPVC pipe v) Nut & bolt vi) water vii) Bamboo & wood from mobilized materials by and other electro-mechanical equipment (small welding machine, small generator, etc.) are the most common type materials used in construction.</p>
<p>Identification of access road for transportation (Yes/No):</p> <p>Yes.A 12-15ft wide LGED Pucca Road and HBB road close to the proposed production tubewell and pump house sites.</p>
<p>Location identification for raw material storage:</p> <p>Adjacent to the pump house & production well location and very close to the construction sites and away from steep slopes.</p>
<p>Type and quantity of waste generated (e.g., Solids wastes, liquid wastes, etc.):</p> <p>Solid type waste:i) Bricks, ii) Sand iii) Cement iv) uPVC pipes v) Nut & bolt vi) PVC solvent cement vii) Bamboo & wood. It is difficult to give exact figures of pre-construction waste produced on a mini pipe water supply construction site. However, 100 kg of waste may be produced.</p>
<p>Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:</p> <p>Very little presence of weed-type of vegetation within the proposed construction area (approx. 25,000 sq. meter land) There is no privately/public owned trees or vegetation in proposed construction areas.</p>
<p>Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation):</p> <p>Low. Very low possibility of stagnant water bodies accumulation in borrow pits reported around or adjacent to the sub-project area.</p>
<p>Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description):</p> <p>Low. Jowarikhali tidal channel or surface water bodies in the sub-project area. But it should not be affected due to pre-construction activities.</p>
<p>Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description):</p> <p>Low. Under these scheme establishment interventions, the effect of destruction or damage of lives and endangered species ecosystem is very low in the site area. Species and ecosystems have not been reported whose lives or movement may be disturbed (i.e., Insects - Ant, bees, earthworm, reptiles, turtle, birds etc.) by the scheme activities.</p>
<p>Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:</p> <p>In pre-Construction phase, stock piling of raw materials can lead to localized land slips. The impacts can be minimized by careful selection of stock pile locations and ensuring large amounts are not stored in one place.</p>
<p>Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:</p> <p>No traffic movement impacts on light but low effects of noise and air pollution.</p>



High = Likely to cause long-term impacts or over large area (>1.00sqkm); Medium = Likely to cause temporary damage or over moderate area (0.5 to 1.00 sqkm); Low = Likely to cause little, short-term damage and over small area (<0.50 sqkm)

B.3: Construction Phase

Type and quantity of waste generated (e.g., Solids wastes, liquid wastes, etc.):

Solid waste: i) Bricks, ii) Sand iii) Cement iv) HDPE pipes v) uPVC pipes vi) Iron nut & bolt vii) PVC solvent cement viii) Gravel ix) Bamboo & wood and x) Solar Panel. It is difficult to give exact figures of construction waste produced on a mini pipe water supply construction site. However, 5,500 kg of waste may be produced.

Liquid waste: Drilling mud and drilling fluid waste water. During construction period, fecal sludge will be generated from labor camp. It is difficult to give exact figures of construction waste produced on a mini pipe water supply construction site. However, 8,500 kg of waste may be produced.

Type and quantity of raw materials used (wood, bricks, cement, water, etc.):

Raw materials: i) Bricks, ii) Sand iii) Cement iv) HDPE pipes v) uPVC pipes with fittings vi) Nut & bolt vii) PVC solvent cement viii) gravel ix) water x) plastic tanks xi) Bamboo & wood and xii) Solar panel from mobilized materials by and other electro-mechanical equipment by the concerned contractor firm.

Quantity: It is difficult to provide exact figures of construction materials that will be used on a mini pipe water supply construction site. However, 20,900 kg of raw materials may be required. Around 5,000m length of HDPE pipes. Approx. 800 nos. house connection.

Approx. area (in square meters) of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards:

No valuable vegetation presence in proposed sub-project construction sites. So, vegetation will not be affected by construction work.

Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors: (High/Medium/Low with explanation):

Low. Trenches for laying of pipelines will be required. These can potentially store stagnant water for short period of time during and after rain events. The top soils in the sub-project area is sandy and the water should drain away quickly.

Disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description):

Low. Jowarikhali tidal channel or surface water bodies in the sub-project area. But it should not be affected due to pre-construction activities.

Destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description):

Low. Under these scheme establishment interventions, the effect of destruction or damage of lives and endangered species ecosystem is very low in the



site area. Species and ecosystems have not been reported whose lives or movement may be disturbed (i.e., Insects - ant, bees, earthworm, reptiles, turtle, birds etc.) by the scheme activities.

Activities that can lead to landslides, slumps, slips and other mass movements in road cuts:

Construction of the sub-project components can lead to low scale effects of land slide/slips. The impacts are expected to be negative, short-term, site-specific within a relatively small area and can be minimized by mitigation measures.

**Erosion of lands below the road bed receiving concentrated outflow carried by covered or open drains:
(High/Medium/Low with description):**

Low. Potential erosion may occur when moderately to highly sloping terrains are disturbed for the construction of Production tube wells and pipe lines. The impacts are expected to be negative, small scale, site-specific within a relatively small area and minimized by mitigation measures.

Describe possible traffic movement impacts on (unwanted) light, noise and air pollution:

No traffic movement impacts on light as all vehicular movement will be during day time. Some temporary, localized effects of noise and air pollution can occur due to truck movements.

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:

In Operation phase of mini-pipe scheme, improper use of personal protective equipment (PPE) and lack of safety procedures may cause injuries. Plant growth adjacent to scheme areas can be affected during maintenance of waters supply pipelines. However, this will be a localized and temporary activity.

**Chance of long-term or semi-permanent destruction of soils:
(High/Medium/Low with description):**

Low. Some localized semi-permanent destruction of soils may occur during maintenance of water supply pipelines.

**Possibility of odor and water, soil quality impacts from SWM and FSM disposal system
(High/Medium/Low with description):**

Low. Sludge from toilet in pump house and office building will be generated. The sludge will be disposed properly in waste management facilities.

**Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors:
(High/Medium/Low with explanation):**



Low. There are low possibilities of stagnant water occurring in operation period if there are leakages in the water supply scheme, including overflow of overhead tanks.

Likely direct and indirect impacts on economic development in the project areas by the sub-project:

Local labor will be involved in maintenance activities. Safe drinking water supply will be helpful reduce water scarcity crisis of the host community and improve their health condition.

Extent of disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes): (High/Medium/Low with description):

Low. Jowarikhil tidal channel or surface water bodies in the sub-project area. In few places along the proposed pipe line pucca drains are observed. Impact on this drainage channels minimal because unless dispose of waste into the drains there will be no chance of contaminate the drain water as well as clogged the drainage network.

Extent of destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development: (High/Medium/Low with description):

Low. Operation and maintenance activities of mini-pipe scheme will be localized and temporary in nature. Species and ecosystems have not been reported whose lives or movement may be disturbed (i.e., Insects - Ant, bees, earthworm, reptiles, turtle, birds etc.) by the scheme activities.

Activities leading to landslides, slumps, slips and other mass movements in road cuts:

Buried pipe channels can form preferential runoff paths, causing localized erosion. Also, leaking pipes can lead to slope instability.

Erosion of lands below the road bed 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:

Temporary, localized impacts on noise and air pollution from maintenance vehicles movement can occur. All maintenance works will be conducted during daytime – so no light impacts expected.

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 C: Social Screening

C.1 General Labor Influx Screening

Key Screening questions	Aspects to Consider
<p>Will the project potentially involve an influx of workers to the project location, and will the influx be considered significant for the local community?</p>	<p>No. there will be no significant impact of labor influx in this sub project. The number of total skilled Labor is 10-12 and unskilled labor 12-16. All the skilled and unskilled labor will be engaged from the local community. No additional foreign labor will be engaged. All the skilled labor will be staying at labor shed within the area of intervention. The size of the labor shed will be 280 square feet.</p>
<p>Is the project located in a rural or remote area?</p>	<p>Yes. The project location is in a host community area demarcated by the Local Government (Union Parishad) authority and belongs to the Bharuakhali union level semi forward to remote area. The total scheme population is around 4,500. The frequency and extent of the contract, communication between the local community and outsiders are normal, and not specially controlled by the respective LGI (union/upazila) authority.</p>
<p>Based on the socioeconomic, cultural, religious and demographic qualities of the local community, population and the incoming workers, is there a possibility that their presence or interaction with the local community could create adverse impacts?</p>	<p>No. It is expected that the presence of the skilled and unskilled local labor (HC) will not create any adverse impacts. The project will benefit the targeted host communities. There will be a code of conduct for the labors to follow, which will be monitored by the PMU and local DPHE on a regular basis. The total population in the union is around 25000 and total area is 15.32 sq. km.</p>
<p>Consultation with Host Community People and relevant stakeholders (SH)</p>	<p>During screening and site identification local DPHE and PMU has conducted two (02) consultation meetings with primary and secondary stakeholders. The stakeholders include LGIs (UP Chairman, Councilors, WATSAN committee, Local Elites Site, Madrasa Management Committee representatives, Contractor team and targeted host community. In addition to the above-mentioned meetings, the local DPHE has undertaken many consultations with male and female members of the concerned host communities. Through the coordination and linkage activities of the project, the authorities have accomplished some formal exchange meetings, individual household visits, FGD, Tea Stall discussion and other consultation meetings.</p>



C.2 Land acquisition and stakeholder screening

Probable Involuntary Resettlement Effects	Yes	No	Not Known	Remarks
Involuntary Acquisition of Land/ Land Donation/ Land Taking				
1. Will there be any land acquisition?		√		No. The required Land (for PTW, Pump housebuilding) is possessed by the Bharuakhali Union Parishad as Government land category. So, the E&S Safeguard team adopt the land using permission process (meeting resolution of UP authority for Bharuakhali union, Sadar upazila areas MPWSS Scheme).
2. Is the project construction site known?	√			The land has been selected with the recommendation of UP & Local DPHE and Local land settlement department.
3. Who manage the land?	√			Land is owned / possesses by Bharuakhali Union parishad (UP) as Government owned land. (No any land acquisition has to be done and as per ESMF – RPF formal process and proposed land is currently empty see site location photos).
4. Will easement be utilized within an existing Right of Way (ROW)? CRP (Common Resource Property)	√			In the proposed HC area provision is available be utilized within an existing Right of Way (ROW) within this proposed MPWSS under EMCRP.
5. Will there be loss of Community people house, agricultural crops, trees, and other productive or fixed assets due to project intervention?		√		No habitat/ shelters will be affected. During construction, if any shelters are affected, contractors are responsible to mitigate the impacts following the RPF.
6. Will there be loss of businesses or enterprises due to project intervention?		√		No
7. Will there be loss of income sources and means of livelihoods due to project intervention?		√		No
Involuntary restrictions on land use or on access to legally designated parks and protected areas				
8. Will people lose access to natural resources, communal facilities and services?		√		No



Information on Displaced Persons:	
9. Any estimate of the likely number of persons that will be displaced by the Project? If yes, approximately how many?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
10. Are any of them poor, female-heads of households, or vulnerable to poverty risks?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
11. Are any displaced persons from indigenous or ethnic minority groups?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
During Screening, project authority will conduct consultation with the primary and secondary stakeholders and provide their observations in the following sections (12 to 16)	



12: Who are the stakeholders of the project? Please provide a summary of consultation meetings with stakeholders and the affected community.

Under EMCRP additional Financing MPWSS, sub-project of Bharuakhali, the key stakeholders are local community, Labors, communities/organizations within the project influence area indirectly affected by project activities. Also, the, relevant Government line departments/agencies, Environment and Forest Department and, NGOs involved at WASH interventions of the proposed local host communities. For determining the environmental and social impacts associated with MPWSS sub-project implementation, DPHE, PMU has been providing importance on involving primary and secondary stakeholders of the scheme area. Therefore, to collect local knowledge for baseline conditions, understand perceptions of the community regarding impact significance, propose meaningful mitigation measures during survey of E&S Screening, an attempt has been made to consult with relevant stakeholders and DPHE officials to obtain their views on MPWSS sub-project interventions.

The Community consultation were conducted through a mix of conventional approach which involved as Participatory Community Consultations (PCC), Focus Group Discussion (FGD), Key Informant Interview (KII) and one-to one interview, during the environmental and social study of the proposed sub-project in conformity with the WB's ESMF guidelines. However, for better understanding the socio-economic and environmental condition 2 (two) consultations with local community have been conducted in the sub-project study area (**Appendix-2**).

Aiming to establish the MPWSS scheme at UP and DPHE assigned HC area by the respective site management committee, under EMCRP (DPHE part) initially GIS specialist, hydrogeologist located the scheme area, E&S consultants, Local DPHE authority and other development partners have conducted a series of consultations with the targeted host community and people on the following issues: Project introduced Social and Environmental safeguard issues, grievance redress mechanism (GRM), possible social environmental and economic effects, livelihoods options, discussions on minimizing the laborer conflict among local host communities, Infrastructure WASH, hygiene, gender-based violence (GBV), forestation, elephant corridor, waste, sludge management, benefits of safe drinking water options by establishment of mini piped water supply and other WASH schemes. The respective Local elites, community man & women also participated in the consultations.

Noted that, most of these interventions are to be situated on the HC areas over UP possessed and occupied land. The E&S screening team and local DPHE have followed ESMF-RPF and land use and scheme pump house establishment permission note paper are taken from the UP authority followed by formal legal procedure as of PMU consent. As per the HC located MPWSS design six decimals of land (owned by Bharuakhali UP) is initially proposed as the minimal amount to establish multistoried RCC structure (5 storied) for PTW, pump house, required solar panels, bill collection booth office, installation / setting up on the spot of proposed Bharuakhali host community.

In the consultation session environmental and social aspects of the project interventions, above-mentioned issues were discussed as potentially occurring at the project sites of HC. The community welcomed and appreciated the DPHE EMCRP initiatives on WASH sector sub projects. Safe water and improved sanitation were considered as one of their priority needs for secured and better livelihoods aspects. They opined that there is no Elephant corridor and no scope of Elephant/Human conflict over there. Through the consultation meeting, the host community were made aware of and sensitized on E&S safeguard issues, precautions, child safety, any chances of displacement of various structures, relocations of local institutions (mosques, school/ learning centers & others, compensation mechanism if any objection and complaints.

The community consultations were conducted with the following objectives: (i) to intrude awareness of the stakeholders about the MPWSS sub-project and to collect their opinion, suggestions for planning and designing of the sub-project (ii) to identify the need and concern of the local public, (iii) to assess cultural patterns and behavior of local communities. Stakeholder consultation was targeted at people/communities who may – directly or indirectly, positively or negatively- be affected by the outcomes of the MPWSS sub-project. The consultations were conducted at two different tiers of stakeholders: Local people and different organization representative who are concern about the sub-project. All of the proceedings and interaction of consultation and FGD have been recorded.



13: What social and cultural factors affect the ability of stakeholders to participate or benefit from the proposed policy or project?

None.

14: Are project objectives consistent with their needs, interests and capacity?

Yes, the EMCRP project objectives are consistent with the respective stakeholders, host community, needs, interests and capacity in the project areas.

15: What will be the impact of the project or sub-project on the various stakeholders, especially women and vulnerable groups?

In the whole E&S screening process it has been revealed that a very positive impact would be created by establishing the MPWSS sub-project. And, obviously the E&S team have consideration to reduce the vulnerability of the host community especially the old aged person, disables, children as well the women as the vulnerable group. Under the MPWSS sub-project of the hostcommunity, the stakeholder's perception is that the overall project impacts will be positive and they expected to have the project be implemented. The influx is straining existing infrastructure and degrading an already resource-constrained social service delivery system and the environment at HC areas. Access to improved water quality and quantity is a priority. In environmental and social aspects, the adjustment of host communities (HC) in Cox's Bazar. Need based Social Protection system would be organized for the victim vulnerable groups.



16: What social risks might affect project or sub-project success?

As per the visit findings and consultation meeting with targeted host community and different stakeholders, Under the Bharuakhali MPWSS scheme screening process it has been revealed and perceived that some social risks might be occurred to establish the scheme interventions.

Noted that this E&S screening report is prepared exclusively for the proposed Bharuakhali area (ward# 1,2 &4) MPWSS site for the targeted local host community. In the scheme area around 750-850 households. Entire area of the scheme is about 2.00sq, km. It is a densely habitat host communities with different religions and ethnicity. Most of the household pattern of the scheme area were found densely while some scattered households were found. In the proposed areas both densely & scattered inhabitant will be benefitted from the proposed MPWSS. At present the local host community people meets up their daily safe water requirement from hand tube wells (shallow/ deep). And to mitigate the scarcity of safe water in this proposed area through installing MPWS scheme. During construction period some social obstacles might be occurred ie. Road traffic, possibility of theft of construction materials, local and outsider labor or community conflicts etc.

Engagement of labor from local host community may appear as cause of some conflict. In order to implement the scheme tasks, additional labor from outside such as technicians will also be engaged which may cause as a risk of local social conflict. A complete Gender action plan has already been developed and approved, a full time Social Development consultant for this project has been assigned to oversee the GBV based issues for this MPWSS sub-project. The gender and GBV issues (i.e., human trafficking, eve teasing, etc.) are being addressed through need-based activities. As a mitigation measure, the Social Safeguard team and grievance redress committee (GRC) will be developed. The respective ESMF based GRM, is keeping abreast on GBV occurrences and will guide the community through consultation meetings and counseling. Given the sensitivities in the HC areas (social, cultural, religious, gender, disabilities, orphaned and vulnerable children, However, by adopting the project E&S safeguard and through community consultation, the LGIs-UP, community leader and local DPHE representatives may determine possible ways and options to overcome and mitigate the constraints and risks during the scheme implementation.



C.3. Social Capital Format

The objective is to list various types of social institutes/bodies working in the host community, intended project influence areas to enlist them for the possible inclusion in the management, and monitoring of the projects. List the name of social institutes/ bodies under the given categorization along with the following information. Use separate sheet for each category of social institute/body. The information can be collected through secondary sources such as LGIs and UN agencies or different development organizations that are involved with the Rohingya crisis projects, etc.

Type of Social Institutes/bodies	Name of Institution	Contact Person and Address	Primary areas of Work	Coverage areas in the communities
Government Organizations	UNO	Mr. Milton Roy UNO, Sadar upazilla, Coxs Bazar unocoxsbazar@mopa.gov.bd	Overall Coordination of GOB dept, LHIs, Dev partners, NGO, INGO, UN Agencies, Volunteer. HH shelter, F/NFIs, WASH facilities, Education, Health, Livelihoods, Social security, power sources, renewable energy.	synchronizing with Host, E&S aspects, Elephant corridors, conserve NR. Establish proper road communication.
	DPHE	Engr. Ritthick Chowdhury, DPHE, Executive Engineer, Cox's Bazar, chowritthick@gmail.com		
	DC	Md. Mamunur Rashid DC, Cox's Bazar dccoxsbazar@mopa.gov.bd		
LGIs	Upazila Chairman	Mr. K Haque Zewel, Sadar UZ Chairman, Cox's Bazar		
	Union Parished Chairman	Shafiqur Rahman Sikdar Chairman, Bharuakhali UP, Sadar, Cox's Bazar		
National Organizations	Not yet on boarded	the database web link https://www.humanitarianresponse.info/en/operations/bangladesh/document/wash-sector-coxs-		



Type of Social Institutes/bodies	Name of Institution	Contact Person and Address	Primary areas of Work	Coverage areas in the communities
		bazar-members-contact-list-17-october-2017		
Volunteer Organizations are those, which constitute the members of the community working towards social development.	Not yet involved	N\ A. Prohibited by the GoB.	Ensuring HC HH shelter, F/NFIs, WASH facilities, Education, Health, Livelihoods, Social security, power sources, renewable solar energy.	



Section D: Environmental and Social Screening Summary

Environmental Screening Summary:

Based on the above environmental and social screening, potential impact for implementing the proposed intervention on different parameters of environment and social with consequence mitigation measures and suggestive monitoring plan with mentioning the responsibilities parties of implementation and supervise the sub-project have been summarized as below:

Section	Main Env. and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
1: Sub-Project Interventions	Air Quality	Under the subproject intervention the overall score is low .	<ul style="list-style-type: none"> Limiting earthworks; Watering of dry exposed surfaces and stockpiles of aggregates at least twice daily, as necessary; (spreading of crushed gravel over backfilled surfaces; Limiting speed of construction vehicles in access roads and work sites to maximum of 20 kph. More details provided in ESMP 	Construction Contractor monitored by Environmental Consultant of PMU	<ul style="list-style-type: none"> Location of stockpiles; Number of complaints from stakeholders; Covering of trucks; Records of air quality inspection; 	Air quality test (CO, PM _{2.5} and PM ₁₀) once in construction period in winter season.
	Soil Erosion	Under the sub-project intervention, the overall score is low .	<ul style="list-style-type: none"> Precautions to be taken when rainstorms are likely, when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms shall be developed by the Contractor. 	Construction Contractor monitored by Environmental Consultant of PMU	<ul style="list-style-type: none"> No visible degradation to nearby drainages, Khals or water bodies due to soil erosion. 	Weekly, especially after rain events.



Section	Main Env. and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			<ul style="list-style-type: none"> The earthwork sites where exposed land surface is vulnerable to runoff shall be consolidated and/or 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 works areas and construction yards shall be kept to a minimum to reduce the erosive potential of surface water flows elsewhere. More details provided in ESMP 			
	Hydrology (surface and groundwater)	Under the sub-project intervention, the overall score is low .	<ul style="list-style-type: none"> All precautions to store chemicals/oil/fuel properly so that no chance of spill. Proper disposal of excess bleaching power and care should be taken to follow the appropriate procedure for chlorination. Monitor water quality according to the environmental management plan. 	Construction Contractor and monitored by Environmental Consultant of PMU	<ul style="list-style-type: none"> Areas for stockpiles, storage of fuels and lubricants and waste materials; Records of water quality inspection; Water Quality Test (National Drinking Water Quality Standard Parameters); No visible degradation to nearby drainages, 	Water quality test (SW & GW) once in construction period and Operation period. Training records reviewed quarterly



Section	Main Env. and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			<ul style="list-style-type: none"> • Ensure drilling equipment is cleaned well and will be free of contaminants such as grease, and chemicals, prior to drilling; and properly dispose of spoils and wastes at the end of each day's work. • More details provided in ESMP 		khals or water bodies due to construction activities. <ul style="list-style-type: none"> • For surface water quality parameters: pH, EC, TSS, FC. • For groundwater quality parameters: pH, TDS, Chloride, As, Fe, Mn • Training records 	
2. Pre-construction Phase	Sanitation, water supply	Under the sub-project intervention, the overall score is low .	<ul style="list-style-type: none"> • Provide suitable housing, adequate supplies of potable water, and toilet and bathing facilities within the housing area for the assigned laborer. • Provide means for disposing of wastewater from toilets, baths and food preparation areas either through a septic tank and soak away, or holding tank with removal by vacuum truck. • More details provided in ESMP. 	Construction Contractor and monitored by Environmental Consultant of PMU	<ul style="list-style-type: none"> • Site-specific H & S Plan; • Records of supply of uncontaminated water; • Record of Health & Safety orientation trainings; • Condition of sanitation facilities for workers 	Visual inspection monthly basis
	Transportation	Under the sub-project intervention, the overall score is low .	<ul style="list-style-type: none"> • All vehicle movement to be done during the day time. • Speed needs to be limited to 20kmph. 	Construction Contractor and monitored by Environmental	<ul style="list-style-type: none"> • Check the vehicle pool. • Record of regular inspection. • Record of 	Monthly monitoring.



Section	Main Env. and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			<ul style="list-style-type: none"> Contractor's responsibility to verify the suitability carrying, loading and unloading of materials by trucks or others transport and head load arrangement. More details provided in ESMP. 	Consultant of PMU	accidents/incidents	
	Storage of construction materials	Under the sub-project intervention, the overall score is low .	<ul style="list-style-type: none"> Obviously orient to the concerned person, team assigned for the construction work. More details provided in ESMP 	Contractor and monitored by Environmental Consultant of PMU	<ul style="list-style-type: none"> List of materials and sources of materials; Location of stockpiling material 	Weekly
	Destruction of terrestrial or aquatic ecosystems	Under the sub-project intervention, the overall score is low .	<ul style="list-style-type: none"> Vegetation clearing work will be done only where subproject intervention will take place. More details provided in ESMP 	Contractor and monitored by Environmental Consultant of PMU	<ul style="list-style-type: none"> Ground openness in the intervention area 	Weekly
3. Construction Phase	Wastes (earth, mud, HDPE cuttings, etc.)	Under the sub-project intervention, the overall score is medium .	<ul style="list-style-type: none"> Prepare and implement drilling mud and water runoff management plan approved by PMU. Wastes must be placed in the designated bins which must be regularly emptied. All waste must be removed from the site and transported 	Construction Contractor and monitored by Environmental Consultant of PMU	<ul style="list-style-type: none"> Complaints from community; Regular inspection of waste management activity; Waste disposal record. 	As work progresses weekly



Section	Main Env. and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			to a disposal site. <ul style="list-style-type: none"> More details provided in ESMP 			
	Storage of materials (Creating dust/ air pollution spillage of liquid/ hazardous substance i.e. oil, drilling fluid, chemicals etc., Risk of crime)	Under the sub-project intervention, the overall score is medium .	<ul style="list-style-type: none"> By the union parishad and DPHE to identify the storage site and other requirements, which will be approved by PMU and consultants More details provided in ESMP 	Construction Contractor and monitored by Environmental Consultant of PMU	<ul style="list-style-type: none"> List of materials and sources of materials; 	Monthly basis during implementation phase.
	Noise pollution	Under the subproject intervention the overall score is low .	<ul style="list-style-type: none"> Consultation with affected people; not to operate noisy equipment during working and operations time (17:00 – 06:00); Sound suppression for equipment; Ear protection for workers. Conduct noise quality monitoring as per ESMP. 	Construction Contractor and monitored by Environmental Consultant of PMU	<ul style="list-style-type: none"> Number of complaints from stakeholders; Use of silencers in noise-producing equipment and sound barriers; Noise Level following decibel meter (dB) 	Inspection by PMU and supervision consultants on monthly basis;
	Air pollution	Under the subproject intervention the overall score is low .	<ul style="list-style-type: none"> Water spraying from test tube well for dust control; construction materials with potential for significant dust generation shall be covered; no smoke emitting 	Construction Contractor and monitored by Environmental Consultant of PMU	<ul style="list-style-type: none"> Location of stockpiles; Number of complaints from stakeholders; Records of air quality inspection; Air quality test report 	Air Quality: PM ₁₀ , PM _{2.5} , SPM and SO ₂ test once in construction period.



Section	Main Env. and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
			equipment; and limiting speed of construction vehicles in access roads and work sites to maximum of 20 kph. <ul style="list-style-type: none"> • More details provided in ESMP 			
	Health & Safety issue	Under the subproject intervention the overall score is Medium .	<ul style="list-style-type: none"> • Construction laborers should use Proper PPEs during working time. • Pipe laying trenches should not keep open long time. After pipe laying, contractor should backfill trenches as quickly as possible. • Open trench (required for thrust block & valve chamber) should be protected with safety tape. • During pipe trenching & earthwork for valve pit construction, working area should protect with marking tap • First aid boxes will be made available at each construction site. • More details provided in ESMP 	Construction Contractor and monitored by Environmental Consultant of PMU	Construction area	Site inspection daily/weekly basis.



Section	Main Env. and Social Impacts	Impact Significance*	Suggested Mitigation Measures	Person/ Institution Responsible	Monitoring Suggestions	
					Indicators	Frequency
4. Operational Phase	Odor& waste disposal of sludge from toilet at Pump House Shed	Under the issue the overall score is low .	<ul style="list-style-type: none"> Use bin covers and/or tarpaulins during transport of wastes and end products (compost). 	Construction Contractor for first 2 years monitored by Environmental Consultant and PMU Long-term responsibility to be determined by DPHE	<ul style="list-style-type: none"> Complaints from communities 	Site inspection daily/weekly basis.
	Erosion of land	Erosion/land slide may occur in small scale near distribution pipes due to runoff from rainstorms or from pipe leakages and the overall score is low .	<ul style="list-style-type: none"> Protection to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. 	Construction Contractor for first 2 years monitored by Environmental Consultant and PMU Long-term responsibility to be determined by DPHE and PMU	<ul style="list-style-type: none"> No visible degradation to nearby drainages or water bodies due to soil erosion in scheme area. 	Site inspection weekly and monthly basis.
	Air Pollution and Noise from Traffic Movement	Temporary, localized impacts. Low.	<ul style="list-style-type: none"> Properly maintained vehicles to be used. Limit speed to 20kmph at/near work sites 	Maintenance Contractor, DPHE (XEN)	<ul style="list-style-type: none"> Complaints by nearby HCs 	During maintenance works
	Stagnant water	From leaking pipes Low	<ul style="list-style-type: none"> Ensure monthly inspections of pipelines for leakages 	DPHE Staff, Upazilla Office	<ul style="list-style-type: none"> Water pooling along, community taps, pipe alignment, overhead towers and production well. 	Monthly



* 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

Social Screening Summary:

To furnish the details of social screening, the ESMF has been followed focusing on major social impacts and significance of the sub-projects (Equity, labor influx, population coverage, easy access, GBV, impact mitigation measures, referral, monitoring suggestions. No land acquisition is required for this MPWSS sub-project. Provision of utilizing existing Right of Way is available for MPWSS sites within this area. The sub-project location was selected with the support of UP Chairman, WATSAN Committee and local DPHE. Consultation meeting was also conducted with local representatives who will be direct or indirectly related in the sub-project. The assigned consultants and local DPHE, UP Chairman and member's team have visited the proposed site location and prepared the screening report. Initially the team surveyed the locality and primarily sorted (2-3) sites to establish the scheme. It has been sorted out the exact situation on safe water provision through consultation meeting with them. The targeted households are being using almost unsafe water for their daily water purposes. As per SDG -6 Bangladesh Govt is committed to ensure Safe water for all within 2030.

Construction induced impact issues:

Land Issues:

Regarding the land provision for the Bharuakhali MPWSS UP authority have arranged and dedicated six decimal of fare land at near to Sabekpara (Land Ref. BS Ledger # 646; Dhag # 3631 - 3632). The UP followed the formal land allocation process, as per the PMU and ESMF policy. The required six decimal of Land (for PTW, Pump house complex with Overhead Reservoir, Scheme Office, Solar panel setting up) has been officially and this piece of land legally donated by Mr. Shajahan, s/o- Mr. Late Chorath Alam a local elite have dedicated to establish said sub-project MPWSS. The required land issue processing was completed as per EMCRP ESMF-AF. Required more land to be used for the rest activities of MPWS scheme (to set up Pipe line, Reservoir, House connections etc) at local road side. In the sub-project interventions, no any induced significant negative impact will be appeared. During construction, movements of heavy vehicles or construction materials may cause damages to the assets. If any damages are reported, local DPHE will hold consultations with the LGIs or WATSAN committee representatives along with contractors to take mitigation measures according to ESMF and RPF.

By the active participation of concerned Scheme stakeholders, community consultation meeting was conducted by the E&S Safeguard team and stakeholder engagement, as they informed officially. All of the MPWSS structures are situated at selected local host community of Bharuakhali (ward # 1, 2 & 4) areas.



Labor issues:

The Mini Piped Water Supply Scheme executing contractor will involve skill & unskilled labors. Around 12-16 unskilled and 10-12 skilled laborers will be engaged from the local/host community/other places of Bangladesh. No foreign labor will be needed to implement the MPWSS sub-project. As the number of incoming workers will be very few and will be working for short periods of time (more than 6 months), so usually there will have no competition in using resources amongst the host communities. Thus, the sub-project will not be created any influx of workers. The unskilled labors will be hired from the local areas. The skilled labors will be accommodated in the proposed site by the contractors. The contractor will prepare two labor sheds (15ftX30ft) for males and 15ftX20ft for females, if necessary. All laborers (skilled and unskilled) must be giving appropriate training and capacity development to entail a multitude of codes of conduct, E&S Safeguard pertaining to conflict, GBV and other issues.

Linkage with other stakeholders:

The team has provided emphasis to keep better linkage with related stakeholders (*i.e.*, LGIs, UP, Local Host Community, INGO & Local NGO, Elites etc.). The team conducts three consultation meeting with them group/individually for any social issues.

GBV issues:

The GBV risk for the project is assessed as moderate at host community. The proposed project activities will involve major civil works through skilled and unskilled laborer from the local host community. Although a strict labor code of conducted will be enforced, a key concern is the potential exposure to sexual exploitation and abuse (SEA), sexual harassment (SHA) and GBV for females in the area. During the construction of the pipelines many women and vulnerable groups in the project location may be exposed to male laborers, which may lead to sexual harassment of varying degrees. A GRM will be established to deal with related issues. The team will conduct consultation meetings with the Host communities, contractors and labor to address GBV. In this meeting, another topic of discussion was the 'do's and don'ts' during implementation of the sub-project intervention to mitigate all the cross-cutting issues. The expected impact of the sub-project on the various stakeholders, women and vulnerable groups is expected to be positive and will create a friendly socioeconomic climate to implement the intervention. If any odd situation appears, the GRC will minimize the issue following the ESMF GRM guideline. On the other hand, if any private land/land leases issues required, the team will be conducted consultation meeting with the owner and related stake holder according the ESMF & resettlement guideline.



This project is a part of the Gender Component of the UNFPA 9th Country Programme and will contribute to achieve the CP outcome 3 “Advanced gender equality, women’s and girls’ empowerment, and reproductive rights, including for the most vulnerable and marginalized women, adolescents and youth”. In case of any GBV it will be communicated with UNFPA through proper channel to resolve the issue as earliest possible. In this project, WFS will be fully operationalized, providing comprehensive GBV case management services such as lifesaving information, community and outreach initiatives, community-based psycho-social support, community engagement in GBV prevention activities through SASA, community engagement in safety audit, and strengthening of community-based support mechanism for women and girls through women support groups and adolescence support groups. The staff’s capacity will be developed to adequately handle GBV case management, coaching, mentoring, supervision, GBVIMS and GBVIMS+ to ensure comprehensive case management services through proper supervision. Capacity development will also focus on inclusion of people with disability into response and prevention work for GBV. Various tools will be developed/adapted to facilitate GBV services, MHPSS services and engaging men and boys into GBV prevention work. Along with the GBV case management services mentioned above, GBV and labor code of conduct awareness programs will be implemented, where all stakeholders including the host communities, labor engaged for the project, site management, the WB and project clients such as DPHE and LGD can participate. They will also implement the preparedness/ contingency plans for any and upcoming disasters. Finally, close monitoring and supervision initiatives will be in place to ensure any arising issues are averted and to facilitate smooth project processes.

Consultations and Future Consultations:

Under the EMCRP, the DPHE has initiated elaborate consultations with various stakeholders of this project for the Mini Piped Water Supply Scheme site management. These include GIS specialist (initially), hydrogeologist located in the scheme area, E&S consultants, local DPHE authorities, other development partners such as UN and local community. These sessions covered topics such as EMCRP introduced Social and Environmental safeguard issues, GRM, possible social environmental and economic effects, livelihoods options, discussions on minimizing the laborer conflict among and local host communities, Infrastructure, WASH, hygiene, GBV, forestation, waste, sludge management. Most importantly, the benefits of safe drinking water options through installing the mini pipelines were discussed. It was also determined that there is no Elephant corridor and no scope of Elephant/Human conflict in the site area. The local community were made aware and sensitized on E&S safeguard issues, precautions, child safety, avoid resettlement, relocations of local institutions (mosques, school/ learning centers & others, any restrictions for the host community, compensation mechanism if any objection and complaints.



As a result of these consultations, the targeted local host community welcomed and appreciated the DPHE EMCRP initiatives on WASH sector MPWSS sub projects. As per their opinion, the safe water and improved sanitation is considered one of the priorities needs for them for secured and better livelihoods aspects.

Thus, future consultations during the lifetime of the project are expected to ensure that negative social and environmental impacts are being mitigated and community needs and opinions are being considered. Consultations will involve determining with the site management team whether proper signage is being used (e.g., for occupational hazard) and whether a properly GRM system is being implemented through an efficient GRC. The GRM will be developed to serve as an integral tool of engaging various stakeholders during project activities and its implementation. A complaints book will be kept for stakeholders and institutionalization of GRM with qualified personnel having adequate training in handling relevant complaints should be ensured. Each and every complaint and way of addressing the complaints will clearly be spelt out in the complaint book. The GRM will be available for a wide array of issues such as malpractice, labor issues and GBV.

Labor and Contractors management during COVID-19:

For projects involving construction/civil works, contractors will develop specific procedures or plans so that adequate precautions are in place to prevent or minimize an outbreak of COVID-19, and what should be done if a worker gets sick.:

- Assessing the characteristics of the workforce, including those with underlying health issues or who may be otherwise at risk
- Confirming workers are fit for work, to include temperature testing and refusing entry to sick workers
- Considering ways to minimize entry/exit to site or the workplace, and limiting contact between workers and the community/general public
- Training workers on hygiene and other preventative measures, and implementing a communication strategy for regular updates on COVID-19 related issues and the status of affected workers
- Treatment of workers who are or should be self-isolating and/or are displaying symptoms
- Assessing risks to continuity of supplies of medicine, water, fuel, food and PPE, taking into account international, national and local supply chains
- Reduction, storage and disposal of medical waste
- Adjustments to work practices, to reduce the number of workers and increase social distancing
- Expanding health facilities on-site compared to usual levels, developing relationships with local health care facilities and organize for the treatment of sick workers
- Building worker accommodations further apart, or having one worker accommodation in a more isolated area, which may be easily converted to quarantine and treatment facilities, if needed
- Establishing a procedure to follow if a worker becomes sick (following WHO guidelines)
- Implementing a communication strategy with the community, community leaders and local government in relation to COVID-19 issues on the site.



For supporting health facilities, plans or procedures will be in place to address the following issues:

- Obtaining adequate supplies of medical PPE, including gowns, aprons, curtains; medical masks and respirators (N95 or FFP2); gloves (medical, and heavy duty for cleaners); eye protection (goggles or face screens); hand washing soap and sanitizer; and effective cleaning equipment. Where relevant PPE cannot be obtained, the plan should consider viable alternatives, such as cloth masks, alcohol-based cleansers, hot water for cleaning and extra handwashing facilities, until such time as the supplies are available
- Training medical staff on the latest WHO advice and recommendations on the specifics of COVID-19
- Conducting enhanced cleaning arrangements, including thorough cleaning (using adequate disinfectant) of catering facilities/canteens/food/drink facilities, latrines/toilets/showers, common areas, including door handles, floors and all surfaces that are touched regularly
- Training and providing cleaning staff with adequate PPE when cleaning consultation rooms and facilities used to treat infected patients
- Implementing a communication strategy/plan to support regular communication, accessible updates and clear messaging to health workers, regarding the spread of COVID-19 in nearby locations, the latest facts and statistics, and applicable procedures.

Recommendation for further environmental and social assessment and/or site specific environmental and social management plan: Yes/No
(*If yes, please specify what assessments/plans would be required. Mention some recommendation on E&S assessment ESMP)

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



Appendix -01

Environmental and Social Management Plan (ESMP) of this Sub project (site-specific)

Considering the intervention wise construction activities of proposed site potential impact with consequence mitigation measures have been designed (as ESMP) in the following table for Mini-Piped Water Supply System (MPWSS):Bharuakhali union, Sadar Upaliza, Cox's Bazar.

Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of land/and other physical assets	<ul style="list-style-type: none"> No land acquisition will be required. As, there were no any mitigation measures according to this impact. 	PMU	Social Development and Hygiene Promotion Consultant of PMU
Pre-Construction Stage	Loss of livelihoods	<ul style="list-style-type: none"> Under this sub-project, there is no scope of negative impact of HC livelihoods. 	PMU& Contractor	Social Development and Hygiene Promotion Consultant of PMU
Pre-Construction Stage	Stakeholders Engagement	<ul style="list-style-type: none"> All the project stakeholders will be engaged in consultation process Individual/Separate community level consultation meeting will be held with the potential targeted HHs Consultation meeting with HC male and female about the project safeguard documents will be disclosed to the stakeholders Targeted HC people will be involved with the GRM, formed GRC 	PMU& Contractor	Social Development and Hygiene Promotion Consultant of PMU



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
Pre-Construction Stage	Loss of Access rights	<ul style="list-style-type: none"> Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. In case of unavoidable circumstances, alternative access will be provided. 	PMU	Social Development and Hygiene Promotion Consultant of PMU
Pre-Construction Stage	Site Selection & implementing interventions: Human-elephant conflict	<ul style="list-style-type: none"> Selection of sub-project sites will be outside of the elephant route/corridor/influenced area. Before finalized the location of sub-project must be contact with Bharuakhali Union parishad and DPHE Upazila Office. Sub-project Interventions will be also included in this area. So, no need to take any further consent for those purpose, if any circumstance arisen. 	PMU	Environmental Consultant of PMU
Pre-Construction Stage	Site Preparation: Soil Erosion; Alteration of natural drainage	<ul style="list-style-type: none"> Selected site will be far away from any water bodies or natural water flowpath to avoid the flash flood or any kind of surface runoff. For production tube well sinking a minimum 10 meters distance from latrines' soak well to be maintained. A minimum aerial distance 200 - 250 meters to be maintained among deep tube wells installation for cone depression and optimizing the production of wells etc. Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. Always try to avoid any disruption of socially sensitive areas with regard to human and biodiversity. The existing slope and natural drainage pattern on the site should not be significantly altered. 	PMU & Contractor	Environmental Consultant of PMU, SAE, DPHE



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> If trees on private lands are damaged during construction operations, compensation shall be paid to the owner as determined by the appropriate authority. The contractors shall ensure that site preparation activities not lead to disruption of activities for the local residents and biodiversity. 		
Pre-Construction Stage	Sanitation & Water Supply	<ul style="list-style-type: none"> The contractors shall provide suitable housing, adequate supplied of potable water, toilet and bathing facilities with in the housing area for the assigned laborer. Safe drinking water will be made available at site for drinking purpose of laborer. The contractors shall provide the disposing of waste water from toilets, baths and food preparation areas either through a septic tank and soak away, or holding tank with removal by vacuum truck. 	PMU & Contractor	Environmental Consultant of PMU, SAE, DPHE
Pre-Construction Stage	Transportation	<ul style="list-style-type: none"> Contractors to provide transportation management plans to be approved by relevant authorities. All vehicle movement to be done during the day time. Speed needs to be limited to 20kmph. Adequate road signs to be planted on access roads signs to limit vehicular speeds. Contractors' responsibility to verify the suitable carrying, loading and unloading of materials by trucks or others transport and head load arrangement. 	PMU & Contractor	Environmental Consultant of PMU, SAE, DPHE
Pre-Construction Stage	Storage of construction materials	<ul style="list-style-type: none"> Obviously orient to the concerned person, team assigned for the construction work. 	PMU & Contractor	Environmental Consultant of PMU



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> The constructors will control unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for these purposes. The contractors will properly maintain and control store house, storages instruments as well as hazardous materials on the site. 		
Construction Activity	<p>Construction Waste: Generated wastes (earth, mud) from drill of pump may cause of degrade the quality of nearby water quality (if any) and surrounding environment -Hazardous waste i.e., waste oil, grease from vehicle maintenance also can decline the nearby water quality and surrounding environment if these are not properly managed</p>	<p>Preparation of a waste management plan covering the following aspects:</p> <ul style="list-style-type: none"> Ring slab septic tank will be installed before starting construction works in order to provide a better sanitation facility to the workers and staffs. A set of designated toilets in the present office building can be used by the labor, instead. 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 and Social Development & Hygiene Promotion Consultant of PMU, and DPHE
Construction Activity	Stagnant water risk	<ul style="list-style-type: none"> Water stagnant area should fence with marking tape. The top soils in the sub-project are sandy, the water should drain away quickly. Contractor should arrange proper water facilities <p>Proper PPEs are essential during construction work.</p>	Contractor	Environmental Consultant and Social Development & Hygiene Promotion Consultant of PMU, and DPHE



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
Construction Activity	Storage of materials (Creating dust/ air pollution spillage of liquid/ hazardous oil, drilling fluid, chemicals., Risk of crime)	<ul style="list-style-type: none"> The contractor shall submit a method statement and plans for the storage of hazardous materials (fuels, oils, and chemicals) and emergency procedures. Proper stockpiling/ storage of construction materials at the site proposed by the contractor & approved by the Environmental Consultant of PMU. Proper covering of dust producing materials with polythene sheet, Spills/ hazardous substances should be disposed off at the site proposed by the contractor & approved by the Environmental Consultant of PMU to avoid soil/ water contamination. 	Contractor	Environmental Consultant of PMU, and DPHE
Construction Activity	Impact on Drain & Aquatic Environment by discharging solid & liquid wastes from construction site & labor camp into nearby drain & through the drain those wastes can fall into canal water.	<ul style="list-style-type: none"> Generated waste and construction debris shall be properly disposed in accordance with the approved designated disposal site(s); Acceptable quality of excavated soil shall be mostly reused for the backfilling, with the surplus portion, if any, disposed in the approved designated disposal site(s). Separate waste collection bins, for organic and inorganic wastes, shall be provided throughout the construction sites, whereby all waste collection bins be regularly emptied and cleaned; Contractor will be responsible to control the workers from discharging of construction waste into water bodies. 	Contractor	Environmental Consultant of PMU, and DPHE
Construction Activity	Erosion of land	<ul style="list-style-type: none"> During construction work (especially for earth excavation) proper slope protection is essential. During backfilling work proper compaction is 	Contractor	Environmental Consultant of PMU, and DPHE



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
		essential (as per spec.) <ul style="list-style-type: none"> • Avoid earthwork during monsoon • Proper PPEs are essential during construction work. • No visible degradation to nearby drainages or water bodies due to soil erosion at/near sub-project site. 		
Construction Activity	Noise pollution will occur due to use of diesel-based construction equipment/ vehicles movement	<ul style="list-style-type: none"> • Construction activity will be at daytime • Contractor will confirm proper measures for avoiding any disturbance of residents as well as biodiversity. • Ensure use of the personal protective equipment's (helmet, goggles, gloves, safety boot) during cutting and welding of the reinforcement and during drilling work; • Availability and access to first-aid equipment and medical supplies in case of any accidents. • Contractor will confirm proper measures for avoiding any disturbance of residents as well as biodiversity. • All construction activities which cause noise pollution, should be stopped during prayers. • 	Contractor	Environmental Consultant of PMU and DPHE
Construction Activity	Air quality will degrade due to dust blowing from earthwork, transportation of waste or fine material and emission of construction vehicles.	<ul style="list-style-type: none"> • Construction machinery shall be properly maintained to minimize exhaust emissions of CO, particulate matter (SPM, PM_{2.5}, PM₁₀) and Hydrocarbons. • Provision of using water sprinklers to dust control. • Construction materials should be covered properly while carrying in vehicles to the site. 	Contractor	Environmental Consultant of PMU and DPHE



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • Vehicle movement will be controlled on haul roads/access roads for limiting dust generation. • 		
Construction Activity	Safety Issues/ impact may be decline if construction management not works rightly	<ul style="list-style-type: none"> • Unauthorized entry to the site area is completely prohibited and the site will be properly fenced with a single entry, for this purpose • Properly maintained and control store house, storages instruments as well as hazardous materials on the site • Health and safety training will be arranged for the communities' labors before project intervention started. • Labor will bring their proper IDs and wear when they will work at sites. • Child labors will not allowed for any kind of activities • Site shall be secured by fencing and maintained at entry points • 	Contractor	Environmental Consultant of PMU and DPHE
Construction Activity	Traffic Management	<ul style="list-style-type: none"> • 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 PMU and DPHE
Construction Activity	Conflicts with existing users due to the scarcity of resource base.	<ul style="list-style-type: none"> • 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. 	Contractor	Environmental Consultant and Social Development & Hygiene



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> If ground water is withdrawn, adequate approvals essential from the appropriate department/authorities before setting up bore wells. Local community must be consulted before any construction works started. 		Promotion Consultant of PMU, DPHE
Construction Activity	Increase in road accidents	<ul style="list-style-type: none"> The movement of heavy machinery and equipment will be restricted to defined routes. Proper signage to be displayed at major junctions. Road diversions and closures to be informed well in advance to the local community. The vehicular movement will be controlled near sensitive locations viz. schools, colleges, hospitals, mosques, identified along designated vehicular transportation routes. Local community will be trained up about traffic management and awareness. 	Contractor	Environmental Consultant of PMU and DPHE
Construction Activity	Social conflict may arise between workers and local residence due to different behavior or custom of outsider worker (if any) as well as consumption of natural resource by the worker	<ul style="list-style-type: none"> An alternate arrangement for fuel wood, heating and cooking required to meet fuel requirement of the labor sheds. Alternating cooking arrangement for the HHs living in this place (HC) should be arranged by the contractor; Contractor will closely monitor all workers so that workers do not involve with local politics as well as sexual harassment, trafficking of 	Contractor	Social Development & Hygiene Promotion Consultant of PMU



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
		<p>women and children.</p> <ul style="list-style-type: none"> • Contractor will be arranged a awareness building training for the workers about nutrition, disaster risk resilience or mitigation, adoption of clean energy for cooking; and prevention of child abuse, child marriage, GBV, sexual harassment, trafficking of women and children as well as illegal drug trade. • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, wildlife hunting, poaching and tree felling. 		
Construction Activity	<p>Health & Safety Risks:</p> <ul style="list-style-type: none"> • The potentialfor exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. • Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis. 	<ul style="list-style-type: none"> • All construction equipment will be properly inspected timely. • The risk assessment will be prepared time to time for all types of work activities on site. • Proper walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. • Proper signpost any slippery areas will be ensured in construction site. • Carry out fire risk assessment for the construction areas, identify sources of fuel and ignition and establish general fire precautions including, means of escape, warning and fighting fire. • A system to alert for workers will be setup on site. This may be temporary or permanent mains operated fire alarm. • Fire extinguishers will be located at identified fire points around the site. The extinguishers will be appropriated to the nature of the 	Contractor	Environmental Consultant and Social Development & Hygiene Promotion Consultant of PMU



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
		<p>potential fire.</p> <ul style="list-style-type: none"> • 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, in addition to training for personnel and drills to test the plan. • Electrical equipment must be safe and properly maintained; works shall not be carried out on live systems. • Only competent authorized persons shall carry out maintenance on electrical equipment, adequate Personal Protective Equipment (PPE) for electrical works must be provided to all personnel involved in the tasks. • An adequate number of staff and first aiders shall be on site in accordance with Bangladesh Labor Law requirements. • First aid kit with adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. shall be made available by the contractor on site. • Emergency evacuation response shall be prepared by the contractor and relevant staff shall be trained through mock-up drills. • Ensure all equipment is suitable for jobs (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), provide the lowest vibration tools that are suitable, can-do works. 		



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
		<ul style="list-style-type: none"> • 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. • Regulated noise exposure assessments and noise level surveys of noisy areas, processes and equipment shall be carried out in order to form the basis for remedial actions when necessary. • Contractor will provide Awareness training to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, and dehydration. • Adequate quantities of drinking water will be available at different locations within the sub-project area. • 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 in how to protect themselves and there should be effective supervision to ensure that the correct methods are being used. 		
<p>Operation & Maintenance</p>	<p>Health & Safety Hazard to operation and maintenance workers</p>	<ul style="list-style-type: none"> • Ensure proper training given to all staff • Ensure PPE used by all staff 	<p>Contractor: up to contractor's liability period.</p> <p>Long-term responsibility to be</p>	<p>Environmental Concern of DPHE</p>



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
			determined by DPHE	
Operation & Maintenance	Construction clean-up (Damage due to debris, spoils, excess construction materials)	<ul style="list-style-type: none"> 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 contractor must arrange the cancellation of all temporary services; 	Contractor: up to contractor's liability period. Long-term responsibility to be determined by DPHE	Environmental Concern of DPHE
Operation & Maintenance	Erosion and land degradation due to leakage of water supply line	<ul style="list-style-type: none"> Preventative maintenance to be undertaken at regular intervals by the Contractor to ensure there are no leaks causing erosion. 	Contractor: up to contractor's liability period. Long-term responsibility to be determined by DPHE	Environmental Concern of DPHE
Operation & Maintenance	Odor & Waste disposal management	<ul style="list-style-type: none"> Use bin covers and/or tarpaulins during transport of wastes. Due attention to be provided in both Feecal sludge/liquid waste& Solid waste management through proper coordination with Coxbazar Development Authority(CDA)/ relevent agency. 	Local DPHE/ CoxDA/ pourasava/others relevant agency	Environmental Concern of DPHE
Operation & Maintenance	Drawdown of groundwater due to excessive withdrawals	<ul style="list-style-type: none"> Coordination with other development agencies for groundwater extraction rates will be monitoring. Regular third-party will be monitoring of groundwater levels 	Contractor for first 2 years. Long-term responsibility to be determined by DPHE	Environmental Consultant of PMU
Potential Natural Hazards	Cyclone	<ul style="list-style-type: none"> Measures to be taken (DRR) at any time of year when cyclones are likely to happen. 	Contractor: up to contractor's liability period.	Environmental Concern of DPHE
	Flash Flooding	<ul style="list-style-type: none"> Protection to be taken at any time of year 	Long-term	Environmental



Project Stage	Potential Environmental & Social Impacts/Issues	Proposed Mitigation Measures/indicators	Institutional Responsibilities	Supervision Responsibility
		when rainstorms are likely, actions to be taken when a rainstorm is imminent	responsibility to be determined by DPHE	Concern of DPHE
	Land sliding	<ul style="list-style-type: none"> Protection to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms. 	Contractor: up to contractor's liability period.	Environmental Concern of DPHE



Appendix-02: Consultation Meeting Photos and Participants list with Bharuakhali UP Chairman, Councilor, Local Elites & WATSAN Committee Representatives



Figure-02: Consultation meeting with Bharuakhali UP, WATSAN Committee and Elites



Appendix-03: List of personnel to attended Consultation Meeting at Bharuakhali UP

ইএমসিআরপি-ডিপিএইচই
MPWSS-কীমের জমি বিষয়ে পরামর্শদাতা মিটিং
আবুয়াখালী ইউনিয়ন, সদর, কক্সবাজার
উপস্থিতির তালিকাঃ

তারিখঃ ২২/০৮/২০২১ইং।

ক্রঃ নং	নাম ও পদবী	সংস্থার নাম	মোবাইল নং	স্বাক্ষর
০১	কম্পিউটার অফিসার/ইউনিয়ন সচিব	আবুয়াখালী ইউ.পি.	০১৮১৭৩৩৬৫	
০২	মৌলানা হুমায়ুন কবীর	"	০১৮১৮-১২৩১৬৫	
০৩	সফিউল হুসেন	"	০১৭৩৭৬০৩০৩৫	
০৪	এম জাহাঙ্গীর আলম	"	০১৮১৫১৫৩৩৮৬	
০৫	আলি হোসেন	"	০১৮১৭৫১০৫৮৭	
০৬	আবুল কালাম	"	০১৮১৭৩২৬২১০	
০৭	আবুল কালাম	"	০১৮১৭০৩৩৮৫৮	
০৮	আবুল কালাম	"	০১৮১৮৭৬২৭১৮	
০৯	আবুল কালাম	"	০১৮১৫৬৭৪৭৬২	
১০	মোঃ আন-আরিন	জি.সি. প্রকল্প DPHE সদর কক্সবাজার	০১৭৫৪-২৬৬৩৩৭	
১১	আবুল কালাম	এমডি কক্সবাজার DPHE EMCRP	০১৭২০৪৭৬৭১	
১২				



EMCRP Environment and Social Screen Report (DPHE)

Community Consultation Meeting for Environmental and Social Management Framework
Of Emergency Multi-Sector Rohingya Crisis Response Project (EMCRP)(GOB-WB)
Department of Public Health Engineering (DPHE)

Subject: Consultation Meeting List of Participant

Upazila: Sadar Union: Baroakhali Venue: UP office Date: 24.02.22 Time: 12:30 PM

Sl.	Name	Organization & Designation	Email/ Mobile No	Signature
1.	Kamal uddin	Chairman	01614-504888	
2.	Baybe AKHAR	Member	0183-9036188	
3.	Zabed Hossain	public	01811300155	
4.	Tahidul ISLAM.	Engineer	01887230520	
5.	Motahar Hossain	Member	01817792358	
6.	Dr. Mostafiz Alim	GOB	0186 944357	
7.	Md. AL-Amin	DPHE, Sadar, SAE	01754-266339	
8.	Mahbubul Alam	EMCRP, DPHE	01713576572	



Appendix-04: UP Land Allocation documents for MPWSS pump house, Bharuakhali Union

বিস্মিল্লাহির রাহমানির রাহীম
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
২নং ভারুয়াখালী ইউনিয়ন পরিষদ
ডাকঘরঃ ভারুয়াখালী, উপজেলাঃ কক্সবাজার সদর
জেলাঃ কক্সবাজার।

কামাল উদ্দিন
চেয়ারম্যান
ভারুয়াখালী, কক্সবাজার সদর
কক্সবাজার, বাংলাদেশ
Kamal Uddin
Chairman
Bharua Khali, Cox's Bazar Sadar
Cox's Bazar, Bangladesh
Mobile: 01814-504888

সূত্রঃ- ভা.ইউ.পি.-১৮০/০১-২২ তারিখঃ 28 02 2022

বরাবর,
নির্বাহী প্রকৌশলী
জনস্বাস্থ্য প্রকৌশল অধিদপ্তর
কক্সবাজার জেলা, কক্সবাজার।

মাধ্যম ঃ উপ-সহকারী প্রকৌশলী, জনস্বাস্থ্য প্রকৌশল অধিদপ্তর, সদর উপজেলা, কক্সবাজার।

বিষয় ঃ- জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবিলায় মাল্টি সেক্টর প্রকল্প আওতায় ২নং ভারুয়াখালী ইউনিয়ন পরিষদের PIPE WATER SUPPLY এর জন্য PTW, PUMP-HOUSE, OVERHEAD TANK AND TREATMENT PLANT নির্মানের জন্য জমি প্রদান প্রসঙ্গে।

জনাব,
উপরোক্ত বিষয়ের ভিত্তিতে ২নং ভারুয়াখালী ইউনিয়ন পরিষদের সকল সদস্য ও সদস্যদের সাথে আলোচনা করে এবং সকলের সম্মতিক্রমে সাবেক পাড়া, বানিয়া পাড়া ও সওদাগর পাড়া (ওয়ার্ড নং- ০১,০২,০৪), গ্রামের পাইপ লাইনের মাধ্যমে পানি সরবরাহ প্রকল্প বাস্তবায়নের জন্য সিদ্ধান্ত গৃহীত হয়। জনাব, মোঃ শাহাজান পং, পিতা: মৃত হুরত আলম, উক্ত প্রকল্প বাস্তবায়নের জন্য ০৬ (ছয়) শতাংশ জমি দান করেন এবং ঐ জমির মৌজা-ভারুয়াখালী, বিএস খতিয়ান নং- ৬৪৬, দাগ নং- ৩৬৩১, ৩৬৩২, যাহার চৌহদ্দি উত্তরে বসত বাড়ি, দক্ষিণে মসজিদ, পূর্বে ও পশ্চিমে চলাচলের রাস্তা।


উল্লেখ্য থাকে যে, এই প্রকল্প বাস্তবায়ন না হইলে উক্ত জমি জমিদাতার কাছে ফেরৎ যাবে। এই প্রকল্প বাস্তবায়নের জন্য সকল সাহায্য ও সহযোগিতা ইউনিয়ন পরিষদ থেকে করা হবে।

কামাল উদ্দিন (কামাল উদ্দিন)
চেয়ারম্যান
২নং ভারুয়াখালী ইউনিয়ন পরিষদ
সদর, কক্সবাজার
সদর, কক্সবাজার।


E-mail: kamaluddinbk2021@gmail.com www.varuakhaliup.coxsbazar.gov.bd

★ শিশুর জন্মের ৪৫ দিনের মধ্যে অনলাইন জন্ম নিবন্ধন নিশ্চিত করুন ★ সময় মত ইউপি কর পরিশোধ করুন ★ আগনার সত্যানকে ছুদে পাঠান ★
★ তথ্যপ্রযুক্তির সাথে নিজেকে সশক্ত করুন ডিজিটাল বাংলাদেশ বিনির্মাণে ভূমিকা রাখুন ★





বিস্মিল্লাহির রাহমানির রাহীম
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
২নং ভারুয়াখালী ইউনিয়ন পরিষদ
ডাকঘরঃ ভারুয়াখালী, উপজেলাঃ কক্সবাজার সদর
জেলাঃ কক্সবাজার।



কামাল উদ্দিন
চেয়ারম্যান
ভারুয়াখালী, কক্সবাজার সদর
কক্সবাজার, বাংলাদেশ
Kamal Uddin
Chairman
Bharua Khali, Cox's Bazar Sadar
Cox's Bazar, Bangladesh
Mobile: 01814-504888

সূত্রঃ- ভা.ইউ.পি- ১৫২/০০-২২

তারিখঃ 28 02 2022

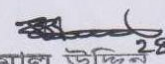
জনস্বাস্থ্য প্রকৌশল অধিদপ্তরের জরুরী প্রকল্প, 'জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় মাল্টি-সেক্টর প্রকল্প' (ডিপিএইচই-অংশ) এর আওতায় কক্সবাজার জেলার সদর উপজেলায় স্থানীয় অভিন্ন জনগোষ্ঠীর মাঝে 'মিনি পাইপাড ওয়াটার সাপ্লাই সিস্টেম' (MPWSS) ক্ষীমের জন্য (ইউপি) জমি দান/ বরাদ্দ এর রেজালেশন নমুনা :

সভার স্থানঃ- ২নং ভারুয়াখালী ইউনিয়ন পরিষদের সভাকক্ষ।
তারিখঃ- ২৪/০২/২০২২ খ্রীঃ, সময়ঃ- সকাল ১০.০০ ঘটিকা
সভাপতিঃ- জনাব কামাল উদ্দিন, চেয়ারম্যান, ০২ নং ভারুয়াখালী ইউনিয়ন পরিষদ।
অংশ গ্রহণকারীর নামঃ- উপস্থিতির তালিকা সংযুক্ত।

সভায় উপস্থাপিত বিভিন্ন তথ্যাবলী আলোচনা পর্যালোচনাপূর্বক গৃহীত সিদ্ধান্ত সমূহ নিম্নে প্রদান করা হলো-

এজেন্ডা/ আলোচ্য সূচি	আলোচনা	গৃহীত সিদ্ধান্ত
<p>১। ২নং ভারুয়াখালী ইউনিয়ন পরিষদ জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় মাল্টি-সেক্টর প্রকল্প (ডিপিএইচই-অংশ) এর আওতায় কক্সবাজার জেলার সদর উপজেলায় স্থানীয় অভিন্ন জনগোষ্ঠীর মাঝে পাইপ লাইনের মাধ্যমে সুপেয় পানি সরবরাহের ক্ষীমের পাম্প হাউজ (বহুতল) স্থাপনা নির্মাণ কাজের জন্য ০৬ (ছয়) শতাংশ জমি বরাদ্দ প্রসঙ্গে</p>	<p>১। সভার সভাপতি জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় মাল্টি-সেক্টর প্রকল্প (ডিপিএইচই-অংশ) এর পানি সরবরাহ ক্ষীমের জমি বরাদ্দ বিষয়ে আলোচনার সূত্রপাত করেন। এ বিষয়ে প্রাথমিকভাবে নির্বাচিত ইউনিয়ন পরিষদের আওতাধীন (০৬) শতাংশ জমি যার দাগ নং-(৪৭৮৮), খতিয়ান-৯৯৪ জায়গাটি জমি সংক্রান্ত জটিলতায় থাকায় জনাব মোঃ শাহাজান গং (০৬) শতাংশ জমি দান করেন যার দাগ নং-(৩৬৩১,৩৬৩২), খতিয়ান-৬৪৬ চৌহদ্দির ভৌগোলিক অবস্থান ও ম্যাপ (সংযুক্ত) এ কাজের জন্য স্থানীয় অভিন্ন/ লক্ষ্যিত জনগোষ্ঠীর মাঝে পাইপ লাইনের মাধ্যমে সুপেয় পানি সরবরাহের ক্ষীমের পাম্প হাউজ (বিশিষ্ট) সহ সোলার প্যানেল স্থাপনা নির্মাণ পূর্বক নিরাপত্তা প্রাচীর দিয়ে বেঠনী দিয়ে রাখার সিদ্ধান্ত গৃহীত হয়।</p> <p>উল্লেখ্য, সভায় উপস্থিত সকলেই একমত পোষণ করেন যে, উক্ত খতিয়ানভুক্ত জমিতে জনস্বাস্থ্য প্রকৌশল অধিদপ্তর কর্তৃক বাস্তবায়িত পানি সরবরাহ প্রকল্পের কাজে ব্যবহৃত হবে। যদি প্রকল্পের প্রাথমিক জরিপে (পানিতে অতিরিক্ত মাত্রায় আয়রন, আর্সেনিকের উপস্থিতি, সেবারের অসামঞ্জস্যতা জনিত কারণে) এই প্রকল্প বাস্তবায়ন না হইলে উক্ত জমি জমিদাতার কাছে ফেরৎ যাবে</p> <p>উল্লিখিত স্থানে ক্ষীম বাস্তবায়নের কাজ অবশ্যই ক্ষীম বাস্তবায়ন ও পরিচালনা কমিটি কর্তৃক পরিচালিত হবে। জনস্বাস্থ্য প্রকৌশল অধিদপ্তরের প্রতিনিধি ও ইউনিয়ন পরিষদ চেয়ারম্যান ও স্থানীয় প্রশাসন, ইউনিয়ন পানি সরবরাহ ও স্যানিটেশন কমিটি (WATSAN) সার্বিক সহযোগীতা প্রদান করবেন।</p>	<p>১। উল্লিখিত খতিয়ান ভুক্ত জরুরী ভিত্তিতে রোহিঙ্গা সংকট মোকাবেলায় মাল্টি-সেক্টর প্রকল্প (ডিপিএইচই -অংশ) এর পানি সরবরাহ ক্ষীমের জমি বরাদ্দ দেয়ার বিষয়ে সর্বসম্মতিক্রমে সিদ্ধান্ত গৃহীত হয়।</p> <p>২। উল্লিখিত স্থানে ক্ষীম বাস্তবায়নের কাজ অবশ্যই ক্ষীম বাস্তবায়ন ও পরিচালনা কমিটি কর্তৃক পরিচালিত হবে।</p> <p>৩। যদি কোন কারণে ক্ষীম বাস্তবায়ন না হয় তবে সেক্ষেত্রে উক্ত জমি পূর্বের অবস্থায় মালিকানাধীন ও অধিভুক্ত থাকবে।</p>

সভায় আর কোন আলোচ্য বিষয় না থাকায় সভাপতি মহোদয় উপস্থিত সকলকে ধন্যবাদ জানিয়ে সভার সমাপ্তি ঘোষণা করেন


কামাল উদ্দিন
চেয়ারম্যান
২নং ভারুয়াখালী ইউনিয়ন পরিষদ
সদর, কক্সবাজার।

28.02.22

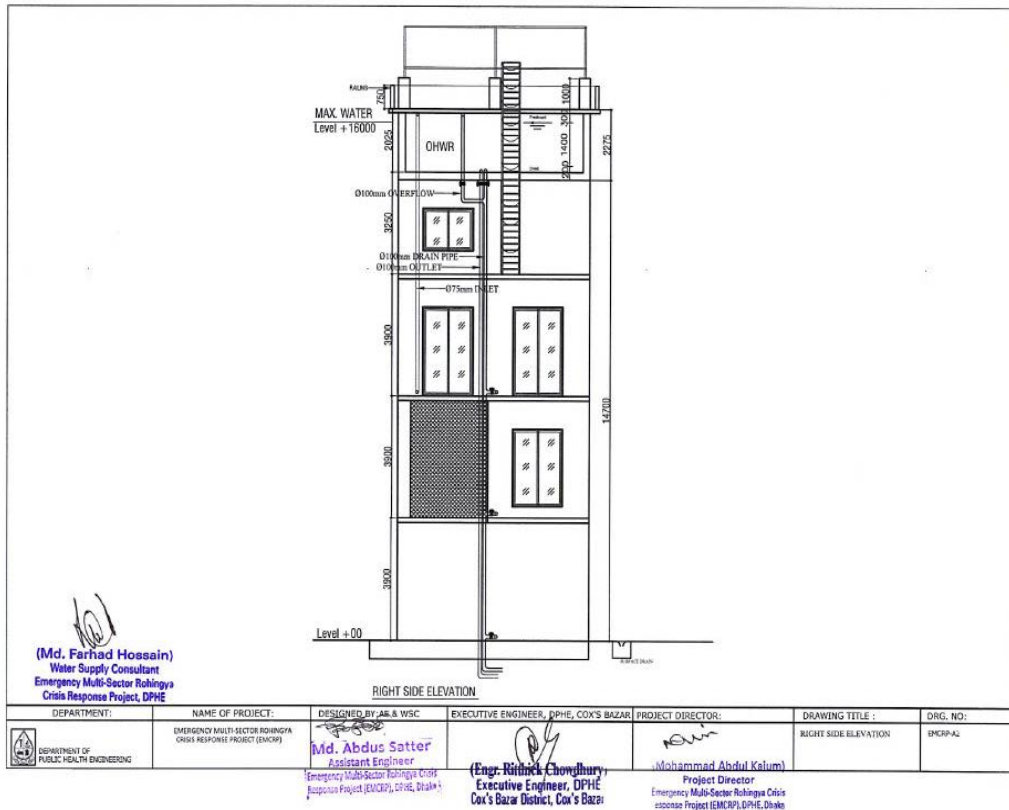
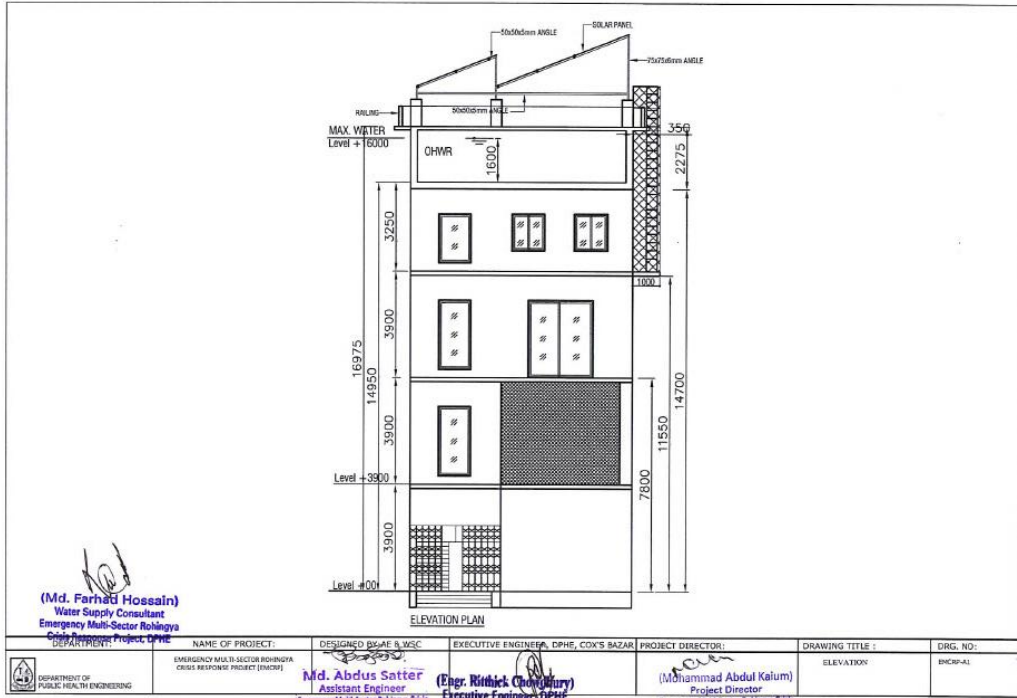
E-mail: kamaluddinbk2021@gmail.com

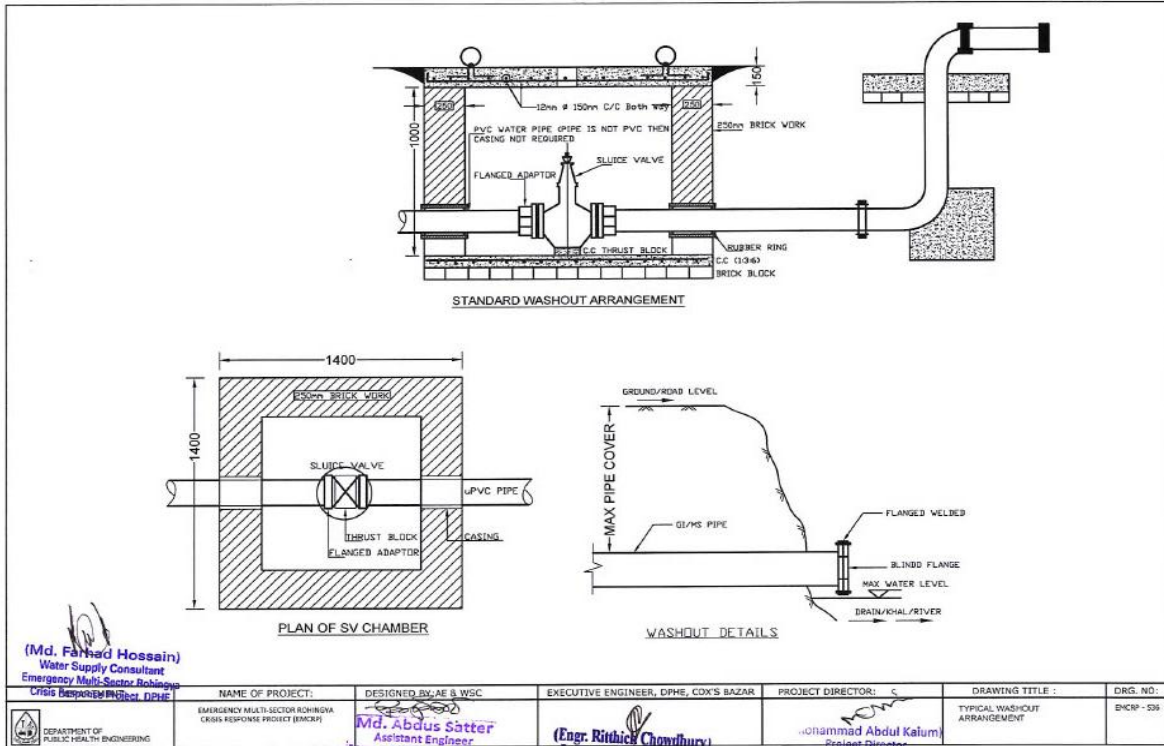
www.varuakhaliup.coxsbazar.gov.bd

* শিশুর জন্মের ৪৫ দিনের মধ্যে অনলাইন জন্ম নিবন্ধন নিশ্চিত করুন * সময় মত ইউপি কর পরিশোধ করুন * আপনার সন্তানকে ভুলে পাঠান *
* তথ্যপ্রযুক্তির সাথে নিজেস্বয়ে সম্পৃক্ত করুন ডিজিটাল বাংলাদেশ বিনির্মাণে ভূমিকা রাখুন *

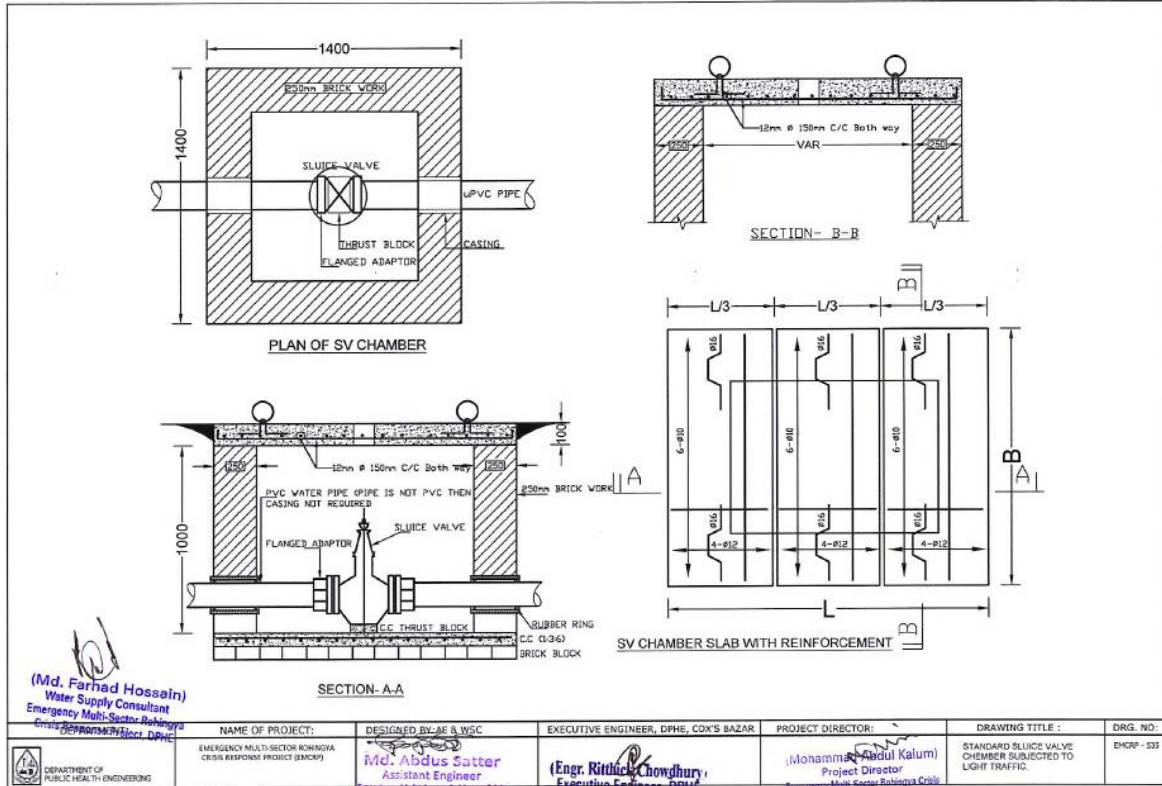


Appendix-05: Proposed design of Pump House and WTP at Bharuakhali Union MPWSS





DEPARTMENT OF PUBLIC HEALTH ENGINEERING	NAME OF PROJECT:	DESIGNED BY: AE & WSC	EXECUTIVE ENGINEER, DPHE, COX'S BAZAR	PROJECT DIRECTOR:	DRAWING TITLE :	DRG. NO.:
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