Government of the People's Republic of Bangladesh
Local Government Engineering Department
www.lged.gov.bd

Environmental and Social Management Framework (ESMF)

Resilient Urban and Territorial Development Project (RUTDP)

Project Number: P178985

Volume 2: ANNEXURES

January 2024

LIST OF ANNEX

Annex: A

Subproject Settings

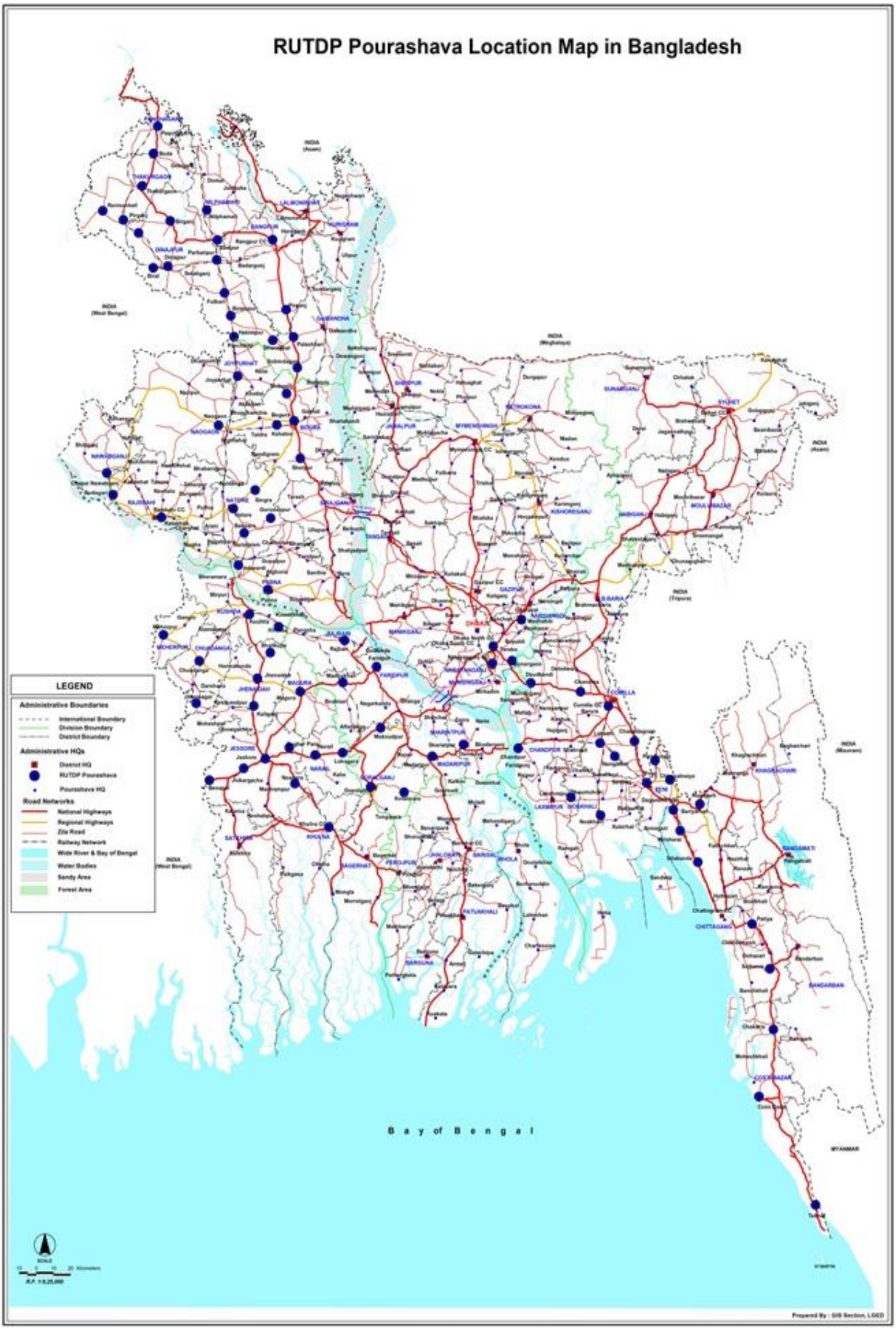
Table A: Projects Administrative Areas (ULBs Location), Categorization and Population

Corridor	Division	District	SL No.	Name of ULB	Category	Area (sq. km.)	Population based on Census 2011 & Others			Estimated Urban Population-2022, Incremental @3.03 %			Population Density per Sq. Km.
							Male	Female	Total	Male	Female	Total	
Dhaka-Mawa-Shariatpur-Madaripur-Gopalgonj-Khulna-Benapole	Dhaka	Shariatpur	1	Shariatpur	A	24.92	25,113	24,422	49,535	35,778	34,794	70,572	2,832
		Madaripur	2	Madaripur	A	14.22	31,070	31,620	62,690	44,265	45,049	89,314	6,281
		Faridpur	3	Faridpur	A	19.07	62,144	59,488	121,632	88,536	84,752	173,289	9,087
			4	Madhukhali	B	12.00	12,049	11,983	24,032	17,166	17,072	34,238	2,853
		Rajbari	5	Rajbari	A	11.65	28,271	28,042	56,313	40,278	39,951	80,229	6,887
		Gopalganj	6	Muksudpur	B	16.77	9,822	9,889	19,711	13,993	14,089	28,082	1,675
			7	Gopalganj	A	14.25	26,369	24,977	51,346	37,568	35,585	73,153	5,134
			8	Kotalipara	A	2.05	2,953	2,855	5,808	4,207	4,068	8,275	4,036
	Khulna	Khulna	9	Khulna City Corporation	CC	50.61	-	-	663,342	364,251	354,484	718,735	14,201
		Jashore	10	Jashore	A	14.71	104,753	97,043	201,796	149,241	138,257	287,498	19,544
			11	Jhikargacha	B	9.43	16,045	16,729	32,774	22,859	23,834	46,693	4,952
			12	BagherPara	C	3.03	4,194	4,096	8,290	5,975	5,836	11,811	3,898
			13	Noapara	A	25.11	43,405	42,451	85,856	61,839	60,480	122,319	4,871
			14	Benapol	A	11.15	18,477	18,047	36,524	26,324	25,712	52,036	4,667
Khulna-Jashore-Pabna-Natore-Bogura-Rangpur-Dinajpur-Panchagarh	Khulna	Narail	15	Narail	A	26.90	21,338	20,961	42,299	30,400	29,863	60,263	2,240
			16	Lohagara	C	17.01	12,193	13,097	25,290	17,371	18,659	36,031	2,118
		Jhenaidah	17	Jhenaidah	A	44.33	55,047	52,787	107,834	78,425	75,206	153,631	3,466
			18	Kaliganj	A	15.89	22,966	22,375	45,341	32,720	31,878	64,597	4,065
			19	Shailkupa	A	20.92	17,671	17,600	35,271	25,176	25,075	50,251	2,402
		Magura	20	Magura	A	43.92	49,065	49,290	98,355	69,903	70,223	140,126	3,190
		Chuadanga	21	Chuadanga	A	37.37	42,940	42,846	85,786	61,177	61,043	122,219	3,271
			22	Jibannagar	B	13.03	12,770	12,748	25,518	18,193	18,162	36,355	2,790
		Meherpur	23	Meherpur	A	15.90	21,784	21,349	43,133	31,036	30,416	61,451	3,865
		Kushtia	24	Kushtia	A	13.32	52,887	50,101	102,988	75,348	71,379	146,727	11,016
			25	Khoksa	C	6.49	8,849	8,758	17,607	12,607	12,478	25,085	3,865
	Rajshahi	Pabna	26	Ishwardi	A	19.59	33,420	32,835	66,255	47,613	46,780	94,393	4,818
			27	Pabna	A	27.27	74,039	70,403	144,442	105,483	100,303	205,786	7,546
		Natore	28	Bonpara	A	12.61	8,568	8,708	17,276	12,207	12,406	24,613	1,952
			29	Natore	A	14.84	41,272	39,931	81,203	58,800	56,890	115,690	7,796
			30	Gurudaspur	A	13.61	16,613	16,194	32,807	23,668	23,072	46,740	3,434

Corridor	Division	District	SL No.	Name of ULB	Category	Area (sq. km.)	Population based on Census 2011 & Others			Estimated Urban Population-2022, Incremental @3.03 %			Population Density per Sq. Km.
							Male	Female	Total	Male	Female	Total	
			31	Singra	A	29.39	16,682	16,510	33,192	23,767	23,522	47,289	1,609
		Rajshahi	32	Rajshahi City Corporation	CC	97.18	-	-	448,087	284,382	268,409	552,791	5,688
			33	Godagari	A	14.29	20,239	19,527	39,766	28,834	27,820	56,655	3,965
		Chapai Nawabganj	34	Chapai Nawabganj	A	32.90	86,012	96,719	182,731	122,541	137,795	260,336	7,913
		Bogura	35	Bogura	A	68.63	210,093	190,890	400,983	299,319	271,960	571,279	8,324
			36	Kahaloo	C	6.82	6,955	6,932	13,887	9,909	9,876	19,785	2,901
			37	Shibganj	C	13.67	10,916	10,727	21,643	15,552	15,283	30,835	2,256
			38	Sherpur	A	7.70	12,602	12,550	25,152	17,954	17,880	35,834	4,654
		Naogaon	39	Naogaon	A	37.08	77,326	73,223	150,549	110,166	104,321	214,487	5,784
		Joypurhat	40	Joypurhat	A	18.55	35,278	33,755	69,033	50,260	48,091	98,351	5,302
	Rangpur	Gaibandha	41	Gobindaganj	A	14.47	19,362	19,053	38,415	27,585	27,145	54,730	3,782
			42	Palashbari	C	18.38	20,325	20,538	40,863	28,957	29,260	58,217	3,167
		Rangpur	43	Rangpur City Corporation	CC	50.69	-	-	-	360,738	347,646	708,384	13,975
			44	Pirganj	C	14.89	9,829	9,783	19,612	14,003	13,938	27,941	1,877
		Dinajpur	45	Ghoraghat	C	18.63	11,405	11,312	22,717	16,249	16,116	32,365	1,737
			46	Hakimpur	B	16.40	15,002	13,409	28,411	21,373	19,104	40,477	2,468
			47	Birampur	A	27.53	22,979	22,355	45,334	32,738	31,849	64,587	2,346
			48	Fulbari	A	16.04	17,651	17,135	34,786	25,147	24,412	49,560	3,090
			49	Parbatipur	A	13.44	14,629	14,514	29,143	20,842	20,678	41,520	3,089
			50	Dinajpur	A	24.50	96,139	90,588	186,727	136,969	129,060	266,029	10,858
			51	Birol	C	10.50	9,268	7,582	16,850	13,204	10,802	24,006	2,286
			52	Birganj	B	6.30	9,949	9,518	19,467	14,174	13,560	27,735	4,402
			53	Setabganj	A	20.23	13,825	13,510	27,335	19,696	19,248	38,944	1,925
		Nilphamari	54	Saidpur	A	34.82	65,060	62,044	127,104	92,691	88,394	181,085	5,201
			55	Nilphamari	A	29.75	23,286	22,100	45,386	52,028	54,150	106,178	3,569
		Thakurgaon	56	Pirganj	A	29.41	14,103	13,597	27,700	20,093	19,372	39,464	1,342
			57	Ranisankail	B	9.15	9,112	8,650	17,762	12,982	12,324	25,305	2,766
			58	Thakurgaon	A	30.03	41,211	39,378	80,589	58,713	56,102	114,815	3,823
		Panchagarh	59	Boda	B	14.32	7,428	7,359	14,787	10,583	10,484	21,067	1,471
			60	Panchagarh	A	22.00	23,241	22,348	45,589	33,111	31,839	64,951	2,952
Chatto gram-	Dhaka	Narsingdi	61	Madhabdi	A	5.10	28,865	20,718	49,583	41,124	29,517	70,641	13,851
		Narayanganj	62	Narayanganj City	CC	46.68	-	-	-	499,854	467,870	967,724	20,731

Corridor	Division	District	SL No.	Name of ULB	Category	Area (sq. km.)	Population based on Census 2011 & Others			Estimated Urban Population-2022, Incremental @3.03 %			Population Density per Sq. Km.
							Male	Female	Total	Male	Female	Total	
				Corporation									
			63	Tarabo	A	19.39	81,088	69,621	150,709	115,526	99,189	214,715	11,073
			64	Sonargaon	B	9.06	16,812	15,984	32,796	23,952	22,772	46,724	5,157
	Chattogram	Cumilla	65	Daudkandi	B	13.18	22,887	23,369	46,256	32,607	33,294	65,901	5,000
			66	Chandina	B	15.12	22,734	24,089	46,823	32,389	34,320	66,709	4,412
			67	Cumilla City Corporation	CC	42.34	-	-	-	220,248	219,166	439,414	10,378
			68	Laksam	A	19.86	35,063	35,569	70,632	49,954	50,675	100,629	5,067
			69	Nangalkot	A	13.06	12,966	13,753	26,719	18,473	19,594	38,066	2,915
			70	Chauddagram	A	16.64	18,838	19,479	38,317	26,838	27,752	54,590	3,281
		Chandpur	71	Chandpur	A	22.91	79,799	79,222	159,021	113,689	112,867	226,557	9,889
		Noakhali	72	Noakhali	A	16.67	54,948	52,706	107,654	78,284	75,090	153,374	9,201
		Feni	73	Feni	A	22.00	82,554	74,417	156,971	117,614	106,022	223,636	10,165
			74	Chhagalnaiya	B	25.25	22,337	22,840	45,177	31,823	32,540	64,364	2,549
			75	Parshuram	B	22.38	14,456	15,235	29,691	20,595	21,705	42,301	1,890
		Lakshmipur	76	Lakshmipur	A	19.42	42,162	40,950	83,112	60,068	58,341	118,409	6,097
		Chattogram	77	Baraiyarhat	A	2.12	5,983	5,619	11,602	8,524	8,005	16,529	7,797
			78	Mirsharai	B	10.49	7,695	8,523	16,218	10,963	12,143	23,106	2,203
			79	Sitakunda	A	27.97	22,759	22,388	45,147	32,425	31,896	64,321	2,300
			80	Satkania	A	12.51	20,909	24,092	45,001	29,789	34,324	64,113	5,125
		Chattogram	81	Patiya	A	9.95	29,191	26,132	55,323	41,588	37,230	78,819	7,921
		Khagrchhari	82	Ramgarh	B	20.87	12,865	11,989	24,854	18,329	17,081	35,409	1,697
		Cox's Bazar	83	Chakaria	A	15.76	37,528	35,341	72,869	53,466	50,350	103,816	6,587
			84	Cox’s Bazar	A	7.94	94,279	73,198	167,477	134,319	104,285	238,604	30,051
			85	Teknaf	A	4.04	13,296	11,760	25,056	18,943	16,754	35,697	8,836
Total						**1760.37**	**2,576,008**	**2,464,225**	**6,151,662**	**5,418,358**	**5,191,014**	**10,609,372**	**6,027**

Figure A: Location Map of Selected ULBs of RUTDP


RUTDP Pourashava Location Map in Bangladesh
LEGEND
Administrative Boundaries
International Boundary
Division Boundary
District Boundary
Administrative HQs
District HQ
RUTDP Pourashava
Pourashava HQ
Road Networks
National Highways
Regional Highways
Zila Road
Railway Network
Wide River & Bay of Bengal
Water Bodies
Sandy Area
Forest Area
B a y of B e n g a l
INDIA (Assam)
INDIA (West Bengal)
INDIA (Meghalaya)
INDIA (Tripura)
INDIA (Mizoram)
MYANMAR
Prepared By : GIS Section, LGED

Annex: B

Resilient Urban and Territorial Development Project (RUTDP)

Subproject Environmental and Social Screening

Name of Paurashava/City Corporation: _____

Upazila: _____ District: _____

Date of screening: _____ Led by: [name/position, organization]

[list of participants in the screening with their signature with dates to be annexed]

Summary Screening Results and Decisions

Name of the Sub-project:	
Sub-project type	[Viz. Road, road & drain, regional market, bus terminal, community center, etc.
Package No.:	
Location:	**Ward No.:**
Subproject activities:	
Number of beneficiaries	
Sub-project Category by E&S risks (per screening)	According to ECR 2023: Green □ Yellow □ Orange □ Red □ Not Listed □ According to WB ESF Risk Classification: High Risk □ Substantial Risk □ Moderate Risk □ Low Risk □
Subproject qualifies for investment?	[1] Yes / [2] No
If yes, detailed ESIA required or not?	[1] Required [2] Not required
Other E&S plans separate of ESMP	[1] Labor Management Plan; [2] Cultural Heritage Management Pla Construction Camp Management Plan; [4] Resettlement Plan; etc.

Screening completed by: _____ _____ _____

Name & Position Organization Signature & Date

Reviewed by :

Name & Position	Organization	Signature & Date

Confirmed by:

Name & Position	Organization	Signature & Date

Environmental and Social Risks Screening Format

A. Subproject Location [*ward no., GPS coordinates showing in a map*]:

B. Description of the subproject activities:

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C. Baseline Description of the Environment [Fill in after visiting the sites]

i. Key Issues of physical and chemical environment (air, soil, water etc.)

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ii. Key Issues of biological Environment (flora, fauna, habitats, eco-system, etc)

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iii. Key Issues of socio-economic environment (economic activities, public health, educational institutions, social institutions, transport hubs, markets, minority settlements, slumps, parks, etc.)

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iv. Any Other Information

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D. Guidelines for Conducting Screening and Filling up of Screening Forms :

Suggest mitigation measures in the remarks column against any risks anticipated or impacts identified in the screening for listed risks parameters, which will be included in the Environmental and Social Management Plan (ESMP) for the subproject.

Risk Category

Depending on the severity of impact of different environmental and social risks parameters listed in the screening formats, the subproject risk rating will be categorized as per GOB and WB standards. The highest risk rating against any of the risk parameters will determine subproject risk level. If only one parameter shows a "high" risk rating, the subproject risk rating will be high, even if all other parameters show substantial, moderate, or low risks. ECR 2023 will be followed for risk category for DoE requirements.

Risk categorization per ESF: High Substantial Moderate Low

Risk categorization per ECR: Red Orange Yellow Green

In reporting the risk category, the higher risk rating will be considered.

For "substantial" and "high" risk subproject, an ESIA and an ESMP need to be developed. ESA/IEE and an ESMP will be prepared for subproject will moderate risk. Only an ESMP will be prepared for subproject with low ES risks.

During the conduct of screening proper documentation to be completed like taking pictures, capturing of latitude and longitude, document stakeholder consultations (if conducted), etc.

Area of Influence of the subproject to be carefully examined on the ground during screening both with observation and discussion with stakeholders. A snapshot of the area of influence may be earmarked on the Google map identifying the exact features on the ground.

E. Land Readiness of the Subproject (ESS 5)

E.1	**Subproject Position:**	
	Subproject type: [1] Completely new infrastructure, [2] Replacement/improvement of existing infrastructure, [3] Rehabilitation of existing infrastructure **Design dimension [length, width, area]:** **Available area in possession (dimension):** **Proposed area (dimension):**	
E.2 Current use of the land proposed for the subproject civil works		[1] Fully same as proposed for the subproject [2] Partially same and the rest is under occupation by private people [3] New land under different use as proposed for the subproject

E.3 In case of [1] under E.2 above, a) Number of current formal private users of the land/building b) Will there be a need to relocate them to allow construction works? c) If yes, how many of them?	 : _____ [1] Yes, / [2] No : _____
E.4 In case of [2] under E.2 above, a) Number of current formal private users of the land/building b) Number of current informal private users of the land/building c) Will there be a need to relocate them to allow construction works? d) If yes, how many of them?	 : _____ : _____ : [1] Yes, / [2] No : _____
E.5 In case of [3] under E.2 above, What is the ownership of the land?	[1] Existing land owned by PSV/CC [2] Other public/khas land [3] Private land
E.6 In case of [1] or [2] under E.5 above, a) Number of current formal private users of the land/building	:
b) Number of current informal private users of the land/building	:
c) Will there be a need to relocate them to allow construction works?	: [1] Yes, / [2] No
d) If yes, how many of them?	:
E.7 In case of [3] under E.5 above, Which method will be used for acquisition of land?	[1] Involuntary acquisition of land [2] Negotiated settlement [3] Voluntary donation with agreed terms [4] Voluntary contribution with compensation [5] The scheme will not be taken

F. Environmental and Social Risk Screening

I. Subproject Settings:

Would the subproject severely affect any of the following environmentally sensitive areas? If yes, the subproject location may be revised.

Screening Questions	YES	NO	Remarks
a) Cultural heritage site			
b) Protected Area (Forest/ Sundarbans/ National Park)			
c) Wetland (Beel, Haor)			
d) Wildlife sanctuary			
e) Buffer zone of protected area			
f) Special area for protecting biodiversity			
g) Mangrove			

II. ES Risk Screening:

A.2 ES Risk Screening in accordance with the Environmental and Social Standards (ESS)

ESS	Screening Questions	YES	NO	Risk Level				Remarks
				Low	Moderate	Substantial	High	
ESS 1	Will the sub-project activities affect vulnerable groups?							
ESS 2	*Will there be migrant workers housed in labor camps at site? (anticipated number, if yes)*							
	Will there be local workers employed for subproject civil works? (anticipated number, if yes)							
	Will there be women employed in construction works at site?							
	Will the activities pose occupational health and safety risks to construction workers?							
	Whether the activities may induce any risks of sexual exploitation, abuse and harassment (SEAH)?							
	Are the activities likely to affect working conditions, particularly in terms of employment, compliance with labor and other laws pertaining to non-discrimination, equal opportunity, child							

ESS	Screening Questions	YES	NO	Risk Level				Remarks
				Low	Moderate	Substantial	High	
	labor, and forced labor of direct, contracted and third-party workers?							
	Is there any suitable location for labor camp?							
	Will there be any suppliers on a continuous basis during the subproject implementation?							
ESS3	Will the activities create air pollution which would require special controls in order to ensure compliance with the Bangladesh standards?							
	Will the noise levels impact particularly sensitive receptors (hospitals, schools, local population centers, natural habitats,)?							
	Is there any risk of groundwater pollution?							
	Is there any risk of surface water pollution?							
	Will the activity generate water effluents (wastewater) that may require special treatment, control or the water management permit?							
	Will the activity generate solid waste that may be considered hazardous, difficult to manage, or may be beyond the scope of regular household waste?							
	For construction of culverts, will there be disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?							
	For installation of tube wells, is there any chance to create hindrance to water bodies that are used for irrigation?							
	For sanitary latrine construction, is there any drinking water source near 30 feet distance of the toilet?							
	Possibility of stagnant water bodies in borrow pits, quarries, etc., encouraging mosquito breeding and other disease vectors?							
	Will the resources used by activities likely to create scarcity of local resources e.g. of water, electricity, gas etc.?							
	Is there any suitable location identified for storage of raw materials							

ESS	Screening Questions	YES	NO	Risk Level				Remarks
				Low	Moderate	Substantial	High	
	Will the activities increase soil erosion and/or sedimentation?							
	Is there any negative impact on soil stability and compactness?							
	Will there be any interruption of the natural flow of river, canal or any stream?							
	Are the drains likely to be used for disposal of domestic sewage?							
	Is there any chance of waterlogging/ insufficient drainage?							
ESS 4	Will there be traffic disturbances due to construction material transport and other project movements?							
	Will there be increased noise due to transportation of equipment and construction materials?							
	Will there be any deep excavation requiring shoring/protection of edges and safety of nearby structures?							
	Will there be any piling work generating vibration and affecting safety of nearby structures?							
	Do the sub-project interventions include construction, reconstruction or demolition works?							
	Has the sub-project site has any seismic risk (historically)?							
	Is there any impact on fish migration and navigation?							
	Are the activities likely to induce potential social conflicts?							
	Is there any chance of destruction of homestead land?							
	Will the activities potentially generate risks and impacts on the health and safety of the affected communities, including impacts on ecosystem services affecting the local community health and safety?							
	Will the proposed activity disrupt access to health services?							
	Will there be potential risks posed by the security arrangements and potential conflicts at the sub-project site between the workers and the affected community?							
ESS 5	Will any agricultural land be used for the sub- project civil works?							

ESS	Screening Questions	YES	NO	Risk Level				Remarks
				Low	Moderate	Substantial	High	
ESS 6	Will there be any negative effects on rare (vulnerable), threatened or endangered species of flora or their habitat?							
	Will there be any negative effects on wildlife habitat, populations, corridors or movement?							
	Will there be any destruction of trees and vegetation?							
	Will there be any negative effects on locally important or valued ecosystems?							
ESS 7	Are there any indigenous/ ethnic communities residing within or adjacent to the sub-project site? If yes, then answer the following questions:							
	i. Are the indigenous people involved in the planning and implementation of the scheme?							
	ii. Will any indigenous/ ethnic household/ individual get negatively impacted by the sub-project?							
	iii. Is there any chance that the sub-project will pose cultural threat to the indigenous/ ethnic communities?							
ESS 8	Will there any negative impact on historically or culturally important sites/structures (mosques, graveyard, monuments, etc.)?							
	Any other, please mention							

G. Summary of Stakeholder Consultation (ESS10)

I. Total Stakeholder Consultations carried out during screening (mention type of consultation and add separate annex showing participants list with signature and pictures)

……

……

II. Outcome of stakeholder consultations (following table may be used).

Date	Location	Type of Consultation	Stakeholder category	Comments, concern raised, and mitigation measures proposed by stakeholders

Date	Location	Type of Consultation	Stakeholder category	Comments, concern raised, and mitigation measures proposed by stakeholders

iii. Any Negative impacts on stakeholders due to project activities identified during stakeholder consultation.

……

……

H. Summary of Risks and Likely Impacts Identified during Screening

Completed by : (Name, designation, mobile number)	 (signature, date)
Reviewed by : (Name, designation, mobile number)	 (signature, date)

Annex C

Structure of Environmental and Social Assessment

Conducting Sub-project Screening and preparing an Environmental and Social Assessment (ESA) Report for every subprojects constitute the procedure of Environmental and Social Assessment (ESA) that describes the process of analysis and planning to ensure that the environmental and social impacts and risks of a project are identified, avoided, minimized, reduced, or mitigated.

The ESA needs to meet the requirements of the World Bank's Environmental and Social Standard (ESS).

Based on the requirements of ESF, the recommended structure of the ESA is as follows:

a. Introduction – description of subproject background, objectives and scope & methodology

b. Subproject Description – components, subproject location, current situation, proposed intervention and need for the subproject, justification of selection of the subproject, envisaged subproject activities and implementation process, category of the subproject, cost estimate and subproject schedule

c. Baseline analysis of environmental and social condition – baseline environmental (physical and biotic environment) and socioeconomic and socio-cultural environmental condition

d. Environmental and Social Screening

e. Specific Impact, Mitigation and Enhancement Measures – dismantle work, site clearing, excavation work and earth work, tree felling, clearing of the vegetation and ecological impact, pollution from the construction materials, air quality and dust, noise and vibration, water quality, occupational health and safety, impacts on social environment and common property resources, labor influx and anticipated impacts, impacts on traffic movement

f. Environmental and Social Management Plan – access to information, grievance redress mechanism, institutional arrangement for environmental safeguard compliances, capacity building, emergency response and disaster management, environmental management action plan, environmental monitoring plan, cost of environmental enhancement works in boq, environmental codes of practice

g. Public Consultation and Participation – consultation with affected people and other interested parties to potentially significant environmental and social risks and impacts are identified

h. Additional Assessment Requirements - Identification of specific assessment tools to carry out the environmental and social assessment and to document the results of such assessment, including the mitigation measures to be implemented. These can include Environmental and Social Assessment (ESA) or Environmental and Social Impact Assessment (ESIA), Hazard or Risk Assessment, Cumulative Impact Assessment, Social and Conflict Analyses, Environmental and Social Management Plan (ESMP), Environmental and Social Management Framework (ESMF), Strategic Environmental and Social Assessment (SESA)

i. Institutional Capacity – description of strengths and weaknesses of implementing agency's environmental and social safeguards track record, capacity and training requirements.

Annex D

Procedures of Environmental and Social Assessments

Environmental and Social Assessment (ESA)

An ESA study, is normally carried out at the early stage of project planning and is used to identify and estimate the potential environmental impacts from the project activities. ESA is normally done within a short time duration based on preliminary information that is readily available through environmental reconnaissance. The general objective of an ESA is to examine all environmental parameters that are likely to be affected by the identified project activities, and to determine the degree of the adverse impacts that are likely to affect them (the environmental parameters). ESA is intended to provide first-hand information about the environmental parameters likely to be influenced by the project activities and the magnitude of the adverse impact in order to allow decision makers to ascertain whether a detailed ESIA is needed. ESA will not make detailed evaluation of the environmental parameters but instead provide a basis for need to undertake detailed evaluation.

The ESA study will be conducted under LGED. However, according to the project planning, the activities those need ESA will be implemented at different periods and hence, multiple ESAs will be required clustering the similar activities prior to the actual intervention starts. The purpose of the conducting an ESA is three folds:

I. to obtain Clearance from DoE and obtaining decision from DoE whether the particular project activities need further assessment such as detail ESIA or not;
II. provide/finalize the ToR for the ESIA study, if required; and
III. continue consultations with project stakeholders

The Process of ESA is briefly outlined below:

Analysis of the Project Components: All the components of each sub-project, like construction and rehabilitation works, will be examined thoroughly, which will in fact guide the development of checklist for reconnaissance survey.

Preparation of Checklist: A comprehensive checklist of potential environmental components likely to be impacted need to be prepared based on the guidelines of different agencies such as DoE and World Bank.

Initial Screening/ Survey: Not all the parameters selected in previous step may be significant for the sub-project; hence the first activity will be to shorten this list to concentrate on significant effects. Data should be collected from all possible secondary sources, if available, and conduct an environmental reconnaissance with the relevant checklist in hand to identify and delineate the significant effects of the sub-project and eliminate the others from further considerations. Public consultation will play an important role in initial screening.

Analysis of alternatives: Alternative site and technological design should be analyzed for the proposed project interventions considering environmental, social, and technological criteria.

Identification and Scaling of Impacts: All the potential short and long term environmental impacts should be identified. The impacts can be graded qualitatively (e.g. high, substantial, moderate, and low) in order to identify major impacts and relevant components. In addition, cumulative and residual impacts of the project interventions need to be clearly addressed.

Identification of Enhancement and Mitigating Measures: From literature survey and applying expert judgment and based on assessed impacts, a list of possible enhancement and mitigating measures for beneficial and adverse effects respectively should be prepared.

Preparation Environmental Management and Monitoring Plan: Environmental and Management Plan for the proposed project should be prepared mentioning the impact mitigation/ enhancement measures with

institutional responsibilities. Also, environmental monitoring plan should be prepared that will include monitoring parameters, frequency, method and responsible agencies.

Recommendations on the need of ESA study: The ESA study should recommend the activities and sub-projects as to whether a full-scale ESA study (ESIA) is needed or not.

A tentative ESA report structure is suggested as follows:

Table: Table of Contents of an ESA Report

Chapter	Chapters required in ESA report
Chapter-1	Introduction
Chapter-2	Subproject description
Chapter-3	Baseline analysis of environmental and social condition
Chapter-4	Environmental and social screening
Chapter-5	Specific impact, mitigation and enhancement measures
Chapter-6	Environmental and social management plan
Chapter-7	Public consultation and participation
Chapter-8	Conclusions and recommendations

Annex E

Structure of the Environmental & Social Impact Assessment (ESIA)

The Consultant is required to prepare an ESIA report that is concise and limited to significant environmental issues. The main text should focus on findings, conclusions and recommended actions, supported by summaries of the data collected and citations for any references used in interpreting those data. Detailed or uninterrupted data are not appropriate in the main text and should be presented in appendices or a separate volume. Unpublished documents used in the assessment may not be readily available and should also be assembled in an annex. Organize the environmental assessment report according to the outline below.

The report should be prepared as per the following key contents:

[1] Executive Summary (ES): The Executive Summary should mirror the report both in form and content and should be about 10 percent in length of the report. The significant findings and recommended actions should be clearly discussed in the ES.

[2] Introduction and Background: This chapter will include (i) purpose of the report and (ii) extent of the environmental study. It will introduce the subproject within the whole project umbrella and the objective, scope and methodology of the study. The chapter should briefly indicate geographic, environmental, social, and temporal context of the subproject area in all three corridor. This chapter should contain maps and photographs showing the area that may be affected by the current and planned activities.

[3] Policy, Legal and Institutional Framework: This chapter will summarize the legal and institutional framework relevant to this specific sub-project as depicted in ESMF. .

[4] Environmental and Social Baseline: The chapter would include baseline data on relevant environmental and social characteristics of the subproject area. This will include both physical and biological environment. Assessment of ES baseline would be based on both primary and secondary data. Primary data collection is also necessary to validate secondary information if deemed necessary. The data may include, among others, environmental quality status (air, noise, water, soil), physical environmental context (physiography, topography, geology, seismicity), hydrology, terrestrial and aquatic ecosystem, basic demographic summary (data on gender, age, educational background, livelihood, housing etc.), status of land use, identification of squatters, common social facilities and buildings (CPR), status of GBV, availability and types/capacity of labor, presence of ethnic minorities, vulnerable groups etc. Data may be obtained from a combination of secondary sources and suitable primary data, such as personal interviews and household or community surveys as relevant. The data should be based on the subproject AoI and be of recent nature (within a year of the study). The consultants will identify what baseline data will be used to measure implementation outcome this sub-project..

[5] Environmental and Social Risks And Impacts

The chapter would address both potential ES impacts of the subproject.
The ES risks and impacts are those (i) defined by the GoB, World Bank Group EHSG and ESF. Specially ES risks are those that may include:

- *Climate change and other trans-boundary or global risks and impacts;*
- *Any material threat to the protection, conservation, maintenance and restoration of natural habitats and biodiversity;*
- *Those related to ecosystem services and the use of living natural resources, such as fisheries and social risks and impacts*
- *Threats to human security through the escalation of personal, communal or crime or violence, if any;*
- *Risks and impacts on the disadvantaged or vulnerable;*
- *Any prejudice or discrimination toward individuals or groups in providing access to development resources and project benefits;*

• Negative potential economic and social impacts relating to the involuntary taking of land or restrictions on land use, if any;
• Risks or impacts associated with land and natural resource tenure and use, including, as relevant, potential project impacts on local land use patterns and tenurial arrangements, land access and availability, food security and land values, and any corresponding risks related to conflict or contestation over land and natural resources;
• Potential impacts on the health, safety and well-being of workers and project-affected communities;
• Effects on the communities due to negative impact on ecosystem services;
• Effects on communities due to design of infrastructure;
• Generation of wastes and its communal affect;
• Any risk due to migrant workers;
• Risks to cultural heritage.

[6] **Alternative Analysis and Design**

This chapter will include an analysis of the potential alternatives with regards to different methods of subproject interventions, technology, alignment, use of materials including their impact on the environment. The chapter will also include an analysis with a no-action scenario. It will also set out the basis for selecting the particular project design proposed and specifies the applicable EHSGs, especially those related to zero emission/discharge, green energy production/usage, circular economy etc.

[7] Mitigation Measures and ES Management Plan

This chapter would include appropriate mitigation measures, ES management plan and monitoring plan for E&S compliance for ES risks and impacts of the subproject as per the guide notes of GOB, WB and GIIP. Mitigation measures may include, among others, issues related to air quality, noise, soil pollution, water resources, traffic management, waste disposal, protecting biodiversity, how concerns and expectations of vulnerable and disadvantaged are addressed and incorporated in the management plan and their engagement modalities during the lifecycle of the project, occupational and community health and safety, GBV, labor issues etc. This chapter will also include estimations for environmental management and monitoring of E&S compliance, financial and manpower allocation requirement etc.:

[8] Continuous Stakeholder Engagement during Implementation

Guided by the Project SEP, this chapter will document the key stakeholder mapping and public consultation, including the method of communication, grievance redress system, keeping in view COVID-19 related protocols. The issue of completing the feedback loop will have to be borne in mind while developing this chapter. Especially, maintenance of continuous engagement of stakeholders and how it will be reported during implementation of ESMP will be also be illustrated. Disclosure and information sharing/reporting back to the stakeholder's modalities will also be provided.

[9] Implementation Arrangements for ESMP

This chapter will assess the institutional capacity of implementing agencies (RHD, BRTA, DGHS, BP) and the NPIU/sub PIUs for implementation of the ESMP, provide suggestions if necessary for augmenting the capacity and describe implementation arrangement and operational measures including responsibilities, timeline, budget, monitoring arrangement, reporting requirement etc. Guideline for preparation of ESMP is included in Annex H.

[10] References: References should be provided to written materials, both published and unpublished, used in study preparation.

Annexes:

- List of Environmental Assessment Preparers
- Record of interagency and consultation meetings, including consultations for obtaining the informed views of the affected people and local nongovernmental organizations (NGOs). The record specifies

any means other than consultations (e.g., surveys) that were used to obtain the views of affected groups and local NGOs

- Data and Unpublished Reference Documents.

Annex F

10 ESSs of World Bank's Environmental and Social Framework

ESS1: Assessment and Management of Environmental and Social Risks and Impacts

ESS1 sets out the Borrower's responsibilities for assessing, managing and monitoring environmental and social risks and impacts associated with each stage of a project supported by the Bank through Investment Project Financing, in order to achieve environmental and social out- comes consistent with the Environmental and Social Standards (ESSs). This includes the types of ES risk and impacts that should be considered in the ES assessment, provision of various ES instruments and use and strengthening of the Borrower's ES framework. Main objectives of ESS1 are:

- To identify, evaluate and manage the environment and social risks and impacts of the project in a manner consistent with the ESSs.
- To adopt a mitigation hierarchy approach to:
  (a) Anticipate and avoid risks and impacts;
  (b) Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels;
  (c) Once risks and impacts have been minimized or reduced, mitigate; and
  (d) Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible.
- To adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing development benefits and opportunities resulting from the project.
- To utilize national environmental and social institutions, systems, laws, regulations and procedures in the assessment, development and implementation of projects, whenever appropriate.
- To promote improved environmental and social performance, in ways which recognize and enhance Borrower capacity.

ESS1 is relevant to the proposed project and provider's basis for ES risk and impact assessment and mitigation measures.

ESS2: Labor and Working Conditions

ESS2 recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. Borrowers can promote sound worker-management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions. It gives provisions on the treatment of Project workers, terms and conditions of work, non-discrimination and equal opportunity, provisions on child labor and forced labor management and occupational health and safety measures. Its specific objectives are:

- To promote safety and health at work.
- To promote the fair treatment, non- discrimination and equal opportunity of project workers.

- To protect project workers, including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with this ESS) and migrant workers, contracted workers, community workers and primary supply workers, as appropriate.
- To prevent the use of all forms of forced labor and child labor.
- To support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law.
- To provide project workers with accessible means to raise work place concerns.

This ESS is relevant to the proposed project and provides guidance for addressing labor related issues. The project will employ Direct and Contracted workers.

ESS3: Resource Efficiency and Pollution Prevention and Management

ESS3 recognizes that economic activity and urbanization often generate pollution to air, water, and land, and consume finite resources that may threaten people, eco- system services and the environment at the local, regional, and global levels. The current and projected atmospheric concentration of greenhouse gases (GHG) threatens the welfare of current and future generations. At the same time, more efficient and effective resource use, pollution prevention and GHG emission avoidance, and mitigation technologies and practices have become more accessible and achievable. It emphasizes on management of wastes, chemical and hazardous materials and contains provisions to address historical pollution and overall use of resource efficiently. Its objectives are:

- To promote the sustainable use of resources, including energy, water and raw materials.
- To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities.
- To avoid or minimize project-related emissions of short and long-lived climate pollutants.
- To avoid or minimize generation of hazardous and non-hazardous waste.
- To minimize and manage the risks and impacts associated with pesticide use.

ESS4: Community Health and Safety

ESS4 recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts. In addition, communities that are already subjected to impacts from climate change may also experience an acceleration or intensification of impacts due to project activities. It takes into account community safety, concept of universal access, traffic and road safety including road safety assessments and monitoring. Also, it addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of Borrowers to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular circumstances, may be vulnerable. Considering the pandemic situation, ESS4 will be required for taking necessary protective measures against COVID-19 for the workers and others associated with the project construction.

ESS-5 Land Acquisition Restrictions on Land Use and Involuntary Resettlement

ESS5 recognizes that project-related land acquisition and restrictions on land use can have adverse impacts on communities and persons. Project-related land acquisition or restrictions on land use may cause physical displacement (relocation, loss of residential land or loss of shelter), economic displacement (loss of land, assets or access to assets, leading to loss of income sources or other means of livelihood),or both.The term "involuntary resettlement" refers to these impacts. Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in displacement.

ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

ESS6 recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development. Biodiversity is defined as the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of

which they are a part; this includes diversity within species, between species, and of ecosystems. Biodiversity often underpins ecosystem services valued by humans. Impacts on biodiversity can therefore often adversely affect the delivery of ecosystem services.

The project will emphasize on conservation of biodiversity and management of sustainable management of living natural resources, including primary production and harvesting, distinguishing between small-scale and commercial activities.

ESS-7 Indigenous Peoples

Applies when the Indigenous Peoples are present or have a collective attachment to the land, whether they are affected positively or negatively and regardless of economic, political or social vulnerability. This ESS recognizes that Indigenous Peoples have identities and aspirations that are distinct from mainstream groups in national societies and often are disadvantaged by traditional models of development. In many instances, they are among the most economically marginalized and vulnerable segments of the population. Their economic, social, and legal status frequently limits their capacity to defend their rights to, and interests in, land, territories and natural and cultural resources, and may restrict their ability to participate in and benefit from development projects. In many cases, they do not receive equitable access to project benefits, or benefits are not devised or delivered in a form that is culturally appropriate, and they may not always be adequately consulted about the design or implementation of projects that would profoundly affect their lives or communities. This ESS recognizes that the roles of men and women in indigenous cultures are often different from those in the mainstream groups, and that women and children have frequently been marginalized both within their own communities and as a result of external developments and may have specific needs.

The project is likely to have few numbers of beneficiaries from the small ethnic communities. The ESMF will outline the procedure to screen the presence of IPs/EMs in the project area and based on this screening, will set out the actions which need to be followed to meet the requirements of this standard including preparation of sub-project specific small ethnic community development plan as applicable.

ESS-8 Cultural Heritage

Illustrates the need to preserve and protect various types of cultural heritage in the project areas. ESS8 recognizes that cultural heritage provides continuity in tangible and intangible forms between the past, present and future. People identify with cultural heritage as a reflection and expression of their constantly evolving values, beliefs, knowledge and traditions. Cultural heritage, in its many manifestations, is important as a source of valuable scientific and historical information, as an economic and social asset for development, and as an integral part of people's cultural identity and practice. ESS8 sets out measures designed to protect cultural heritage throughout the project lifecycle.

This ESS sets out general provisions on risks and impacts to cultural heritage from project activities. ESS7 sets out additional requirements for cultural heritage in the context of Indigenous Peoples. ESS6 recognizes the social and cultural values of biodiversity. Provisions on Stakeholder Engagement and Information Disclosure are set out in ESS10.

The proposed project will take every effort to make sure that the physical works are not located near any heritage sites. In any case, if any cultural heritage has risks regarding any of the project interventions, adequate measures will be designed to minimize or mitigate the risks.

ESS-9 Financial Intermediaries

Specifies how FIs will assess and manage ES risks and impacts. The proposed project will not involve any financial intermediaries.

ESS-10 Stakeholder Engagement and Information Disclosure

Requires stakeholder engagement throughout the project life cycle, and preparation and implementation of a Stakeholder Engagement Plan (SEP). Requires early identification of stakeholders, both project-affected parties

and other interested parties, and clarification on how effective engagement takes place. Stakeholder engagement is an inclusive process conducted throughout the project life cycle. Where properly designed and implemented, it supports the development of strong, constructive and responsive relationships that are important for successful management of a project's environmental and social risks. Stakeholder engagement is most effective when initiated at an early stage of the project development process, and is an integral part of early project decisions and the assessment, management and monitoring of the project's environmental and social risks and impacts. The proposed project will ensure meaningful consultations with all potential stakeholders will be made paying attention to the inclusion of women, vulnerable and disadvantaged groups.

Annex G

Guideline for Preparing Environment and Social Management Plan (ESMP)

The Consultant is required to develop an Environmental and Social Management Plan (ESMP) consisting of a set of feasible and cost-effective mitigation measures and monitoring and institutional plan to prevent or reduce significant negative impacts to acceptable levels. This will include measures for emergency response to accidental events (e.g., fires, explosions), as appropriate. The Consultant will provide an estimation of the impacts and costs of the mitigation measures, and of the institutional and training requirements to implement them. Specially, this would include

- **Environmental and Social Mitigation & Enhancement Measures:** Recommend feasible and cost-effective measures to prevent or reduce significant negative impacts to acceptable levels. Apart from mitigation of the potential adverse impacts on the environmental components, the ESMP shall identify opportunities that exist for the enhancement of the environmental quality along the surrounding area. Residual impacts from the environmental measures shall also be clearly identified. The ESMP shall include detailed specification, bill of quantities, execution drawings and contracting procedures for execution of the environmental mitigation and enhancement measures suggested, separate for pre-construction, construction and operation periods. In addition, the ESMP shall include good practice guides related to construction and upkeep of plant and machinery. Responsibilities for execution and supervision of each of the mitigation and enhancement measures shall be specified in the ESMP. A plan for continued consultation to be conducted during implementation stage of the project shall also be appended.
- **Institutional Arrangements, Capacity Building and Trainings:** The ESMPs shall describe the implementation arrangement needed for the project, implementation of ESMP, especially the capacity building proposals including the staffing of the environment unit (as and when recommended) adequate to implement the environmental mitigation and enhancement measures. For each staff position recommended to be created, detailed job responsibilities shall be defined. Equipment and resources required for the environment unit shall be specified, and bill of quantities prepared. A training plan and schedule shall be prepared specifying the target groups for individual training programs, the content and mode of training. Training plans shall normally be made for the client agency (including the environmental unit), the supervision consultants and the contractors.
- **Supervision and Monitoring:** Environmental monitoring plan will be an integral part of the ESMP, which outlines the specific information to be collected for ensuring the environmental quality at different stages of project implementation. The parameters and their frequency of monitoring should be provided along with cost of the monitoring plan and institutional arrangements for conducting monitoring. Reporting formats should be provided along with a clear arrangement for reporting and talk corrective action. The ESMP shall list all mandatory government clearance conditions, and the status of procuring clearances.

- **Reporting:** The ESMP will specify the documentation and reporting requirements, specifically, complete record will be maintained for compliance monitoring, effects monitoring, trainings, grievances, accidents, incidents, resource usage, and waste disposal quantities.
- **Grievance Redress Mechanism:** The ESMP will describe the grievance redress mechanism (GRM) to address the project-related grievances and complaints particularly from the local communities.
- **ESMP implementation cost:** The ESMP will also include the cost of its implementation including personnel costs, costs on trainings, effects monitoring, additional studies, and others.

Annex H

Typical Mitigation Measures

The ESMF suggests a broad range of mitigation and enhancement measures to reduce negative impacts and enhance benefits from different sub-project interventions under the RUTDP Project. Mitigation measures are identified and designed to avoid or eliminate or offset adverse environmental impacts, or reduce them to acceptable levels during both construction and operation phases of a sub-project intervention.

Construction Phase:

The overall impact assessment of the proposed sub-projects to be implemented at the ULBs reveals that most of the adverse impacts could be minimized or eliminated by adopting standard mitigation measures; there is also scope to enhance some of the beneficial impacts to be generated from the proposed sub-projects. This section describes the standard mitigation and enhancement measures that could be applied to the sub-project under RUTDP.

In order to identify mitigation/ enhancement measures, the potential impacts have been categorized into: (a) “general impacts”, which are typical common impacts to be experienced in most sub-projects, and (b) “sub-project specific impacts”. Table a in annex I shows typical activities to be carried out under different sub-projects, corresponding “general impacts” and suggested mitigation and enhancement measures. It also assigns responsibility for implementation of mitigation and enhancement measures.

Operational Phase:

During the operational phase, the ULBs will be responsible for the operation and maintenance of the infrastructure to be developed under the RUTDP. Apart from regular operation and maintenance, a number of issues would require special attention for reducing/ avoiding possible adverse environmental impacts. These include regular maintenance and management of storm drains, and proper operation of boat landing jetty to reduce risk of water pollution; and proper operation and management of kitchen/ super market, slaughter house because of their potential implications on health and environment.

With respect to storm drains, utmost efforts must be made to keep it operational (i.e., flowing) by restricting discharge of solid wastes into it and by periodically cleaning the drain. Adequate monitoring is also needed to make sure that the storm drain does not receive direct discharge of toilet wastewater from households, markets and commercial establishments. Such discharges would contaminate the drainage water and eventually the receiving water body (river or khal), and would bring about a wide range of adverse environmental and health outcomes. Improper management of boat landing jetty (e.g., disposal of spent oil and other wastes) would also lead to water pollution and associated adverse impacts (including adverse ecological impacts).

Disposal of solid and other wastes from kitchen market, cattle market and slaughter house could also cause environmental pollution. Wastewater from slaughter house, if not properly disposed, could bring about adverse health and environmental impacts.

Increased risks of accidents have been observed at some of the ULBs visited after construction of a new road. Such risks could often be minimized by proper management of traffic and pedestrian movement. Movement of heavy vehicles (loaded trucks) in local roads is a common cause of road damage at many ULBs.

Some common mitigation measures (applicable for all sub-projects) are as follows:

- Any organic wastes from construction camp site or any source at construction site should be properly collected and composted
- Encourage use of renewable energy, such as solar, wind or biomass energy, to meet energy requirements to reduce carbon footprints of buildings during construction and operation phases.
- Toxicity of dredged materials (from Bay of Bengal) to be used for filling work should be tested prior to commencing filling activities
- Emission of dust can be mitigated by a number of measures together or separately.
    - Ensure that all trucks, vehicles, and electrical devices used in the project area will comply with technical and environmental safety regulations
    - Install dust cover on vehicles at the construction sites and during transportation in the city. Dust control (watering dusty areas) on non-paved access roads
    - Schedule the operation times for vehicles, machines working in the construction area to reduce air emissions
    - Use of adapted Protective Personal Equipment (ear plugs, goggles, helmets, gloves, masks) where necessary
    - Schedule the operation times for vehicles, machines working in the construction area to reduce air emissions

- Noise pollution may be mitigated to certain degrees following the measures:
    - Perform the pre-construction activities within the day time and minimize work done during the night.
    - Regulate the speed of traffic inside the site and in the surrounding areas in construction sites.
    - Construct sound walls as feasible in selected areas.
    - Regularly carry out maintenance and routine inspections on vehicles to ensure that they are meeting the technical standards. Old vehicles and construction machinery with poor quality shall be prohibited for being used within the project's activities.
    - Noise volume should not exceed 55 dBA at the nearest off-site reception location.

- For aesthetic reasons maintain cleanliness within the sites/facilities along with appropriate landscaping of the grounds with planting of suitable trees, grass, and flowers.
- Prepare an effective plan to reduce GBV
- Prepare and implement RAP to acquire land (if required)
- Prepare effective traffic management plan
- Encourage engagement of PAPs in the development works
- Training PAPs for their livelihood's restoration

Annex I

Sample of Mitigation/Enhancement measures during different Phases of a Subproject

Guidance on possible environmental and social mitigation and enhancement measures for different phases of a sub-project is given below, which will be adopted in congruence with the site-specific situation, available technologies, resources and institutional capacity of a project

Table a: *Generic Mitigation/ Enhancement measures during pre-construction phase of construction of infrastructure under RUTDP*

Activity / Issues	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
Land Acquisition/ Requisition	• Encroachment of agricultural land, cultural sites, fish habitat etc. • Loss of agricultural production, fish resources; • Loss of income and livelihoods; • Social conflict.	- Avoid agricultural land, social/religious institutes, fish habitat during finalization of the alignment of the approach road and location of the bridge; - Prior to start construction adequate compensation should be given to the PAPs in-time according to RAP. - Adequate compensation should be given for standing crops; - Avoid agricultural land, if possible; - Create job opportunities for the PAPs.	ULB, LGED
Housing and Commercial Structures	• Loss of housing and commercial structures; • Dust pollution; • Loss of income and livelihoods.	- Avoid the housing and commercial structure during the finalization of the alignment and location of the bridge; - Proper compensation should be given before starting the removal or dismantling works; - Create job opportunities for the PAPs. - Water spraying on the bear surface or dust pollution source;	ontractor Monitoring by - ULB, LGED
Loss of vegetation/ tree	• Accident risk during removal of trees/vegetation's in the project sites; • Birds and others species can migrate from the trees/vegetation's; • Impacts on the local climatic condition.	- Prior to start construction, all vegetation should be removed from the proposed construction sites with the consultation of the local relevant authorities; - Avoid disturbance and careful during construction vehicle and equipment movement; - Proper H&S measures (use of appropriate PPE such as hand gloves, safety shoes and helmet) for the workers should be taken during removal of trees, bushes & crops; - To mitigate the ecological impact, tree plantation plan can be considered in the design & accordingly tree plantation will be done in an appropriate location to be determined by the LGED after consultation with the concerned authority; - Proper H&S measures (use of appropriate PPE such as hand gloves, safety shoes and helmet) for the workers should be taken during removal of trees, bushes & crops; - To mitigate the ecological impact, tree plantation plan can be considered in the design & accordingly tree plantation will be done in an appropriate location to be	ontractor Monitoring by - ULB, LGED

Activity / Issues	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
		determined by the LGED after consultation with the concerned authority; - The engineer shall approved such felling; only when the proponent secures receive a “clearance” for such felling from the LGED, as applicable; - Tree felling, if unavoidable, shall be done only after compensatory plantation of at least two saplings for the every tree cut is done; - During the tree removal from the bridges and approaches construction sites diameter at best height (DBH) of the trees is 6 inch, only such trees should be considered by the contractor for compensation and plantation; - Tree plantation at the suitable locations after completion of the construction activities.	
Removal of Utilities	• Vulnerable for workers health and safety; • During movement of heavy Construction machineries equipment’s can damage the utility services if not previously removed; • Due to carelessness or incautiousness death from sudden electric shocks may occur	- Prior to start construction, the utility services (electrical cables, telephone line, water supply pipeline, gas supply pipeline and internet line) should be shifted with the consultation of the relevant organizations; - Inform the local community before starting removal or demolishing work; - Carefully remove the utilities that are connected to any structures; - Proper Health and safety measures for the workers should be taken during shifting of these lines to avoid any incidents.	ontractor Monitoring by - ULB, LGED
Dismantling	• Dust pollution in the construction site; • Health hazard for the workers and community during dismantling works; • Noise level increase; • Vibration effects on the structures on the surrounding of the project area; • Surface water contamination, blockage of navigation and drainage, impacts on aquatic animal; • A detail of the dismantling plan is also given in the Annex-C.	- Notify the adjacent community before starting the demolishing work; - During the removal or demolition of existing structures if required will be fully removed by the contractor; - Spraying of water in the dry land or from where there is a possibility to generate dust; - Banned fishing, swimming, boat movement activities in the construction sites, if applicable; - Proper H&S measures for the workers such as using of appropriate PPE (helmet, Earplug, musk, safety shoes, hand gloves etc.) should be taken to avoid any accidents; - Construct noise barrier around the dismantling site; - Stop the engine when it is not required; - Monitor Noise level as per DoE guidelines; - Impact wise mitigation measures are given.	

Activity / Issues	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
Archaeological/ Historical/ Social/ Cultural/ Religious Sites	• Encroachment of Archaeological/ Historical/ Social/ Cultural/ Religious sites • Air and dust pollution; • Noise level may create uncomforted for the local community; • Vibration can effect on social/ cultural/ religious site.	- Avoid Archaeological/Historical/Social/Cultural/ Religious sites during the site selection and improvement works; - Spraying water on the dry surface to reduce dust pollution; - Vehicles transporting construction material to be covered; - Create noise barrier around the construction sites; - Limit the speed of vehicles; - Stop the demolish work for short time like prayer time. - Realignment of bridge approach road (in case of bridge) if required.	ontractor Monitoring by - ULB, LGED
Setting up labour camps	• Land encroachment; • Solid and liquid waste from the labour camp	- Labour camp should be constructed at a distance from the water bodies; - Avoid productive land and away from the settlement during the selection of land for the setup of labour camp; - No solid and liquid waste discharge into the water bodies - Instruct workers to maintain clean environment in the camps	ontractor Monitoring by - ULB, LGED

Note: Mitigation/enhancement measures cost will be determined during the environmental assessment of individual project based on its location, types of construction, implementation schedule and cost for project implementation and requirement of mitigation/enhancement activities.

Table b: *Generic Environmental Impacts during Construction Phase and Corresponding Mitigation and Enhancement Measures*

Activity / Issues	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
Construction and operation of labor shed for the workers (Workforce and labor shed management)	Generation of sewage and solid waste may degrade quality of the adjacent water bodies and surrounding environment	• Construction of sanitary latrine considering 15 persons for one toilet at the labor shed and separate toilet for male and female. • Ensure provision of waste bins (introduce separate waste bins for organic and inorganic wastes) and Erection of “no litter” sign, • Ensure wastes (solid wastes and other forms of wastes) disposal at the designated dumping site.	Contractor Monitoring by - ULB, LGED
	Health of workers	• Conduct formal and unofficial discussion to increase awareness about hygiene practices among the workers; • Ensure availability and access to first-aid equipment and medical supplies for the workers.	
	Possible development of labor camp into permanent settlement	• Contractor to remove labor camp at the completion of contract.	

Activity / Issues	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
	Outside labor force causing negative impact on health and social well-being of local people	• Ensure that contractor employ local work force to provide work opportunity to the local people and conduct formal and unofficial awareness program for the health and social well-being of the local people.	
General construction works	Drainage congestion and flooding	• Ensure provision for adequate drainage of storm water if needed; • Ensure provision for adequate diversion channel, if required; • Ensure provision for pumping of congested water if needed; • Ensure adequate monitoring of drainage effects, especially if construction works are carried out during the wet season.	Contractor Monitoring by - ULB, LGED
	Air pollution	• Check regularly and ensure that all the subproject vehicles are in good operating condition; • Ensure contractor spray water on dry surfaces regularly to reduce dust generation; • Maintain adequate moisture content of the soil and sand used for transportation, compaction and handling; • Ensure contractor sprinkle and cover stockpiles of loose materials (e.g., fine aggregates); • Ensure contractor avoid use of equipment at site and far from the local residents, which produce significant amount of particulate matter i.e. stone crusher, brick crusher.	
	Traffic congestion, effect on traffic and pedestrian safety	• Ensure schedule deliveries of materials/ equipment during off-peak hours; • Place traffic/ cautionary sign to avoid undue traffic congestion and accidents; • Selection of alternative routes, where possible for sub-project vehicles; • Depute flagman for traffic control; • Arrange for signal light at night; • Inform the local people about the subproject activities.	
	Noise pollution	• In front of the road side sensitive infrastructures such as educational institutes and religious centers, construction work should be performed after school/ college and or in holiday and considering the prayer time; • Check and maintenance the equipment properly; • Avoid using of construction equipment producing excessive noise at night; • Regulate use of horns and avoid undue use of hydraulic horns by the subproject vehicles.	
	Water and soil pollution	• Prevent discharge of fuel, lubricants, chemicals and wastes into adjacent water bodies like ponds, Khal, ditches, irrigational and seasonal springs.	

Activity / Issues	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
	Felling of trees, clearing of vegetation and ecological disturbances	• To compensate and ecological enhancement trees will be planted after @3m distance. The proposed planted trees preferably local fruits, flowers, medicinal and ornamental trees at road side area where space is available and or anywhere ULBs owned suitable places in the subproject area.	Contractor Monitoring by - ULB, LGED
	Accidents	• Conduct formal and informal discussion for creating awareness about the accidents; • Provide PPEs and ensure using of the personal protective equipment by the workers.	
	Spills and leaks of oil, toxic chemicals	• Proper handling of lubricating oil and fuel so that it does not fall on the soil and water body; • Collection, proper treatment, and disposal of the spills.	
All construction works	Beneficial impact on employment generation Possible complaints and suggestion from the local people and stakeholder about the subproject activities General degradation of the environment	• Employ local people in the subproject activities as much as possible; • Give priority to poor people living within subproject area in subproject related works (e.g., excavation and other works, which do not require skilled manpower); • Use existing grievance registrar and complaints box that has been already delivered in the City Corporation; • Ensure environmental enhancement measures such as tree plantation and traffic/ cautionary sign.	
Environmental impacts due to the key construction activities and corresponding mitigation measures for the Urban Roads and allied works			
Excavation/ Earth work/ Dismantle work/ site clearing work	Generation of solid and construction wastes due to the dismantle works; Generation of loose soil due to dismantlement and site clearing work.	• Disposal of soil and construction wastes at designated dumping site at designated dumping site; • Cover exposed dry loose soil with fabric.	Contractor Monitoring by - ULB, LGED
	Accidents	• Carefully handle of the hammer and other equipment to be used for dismantle and site clearing work.	
	Air pollution	• Regular maintenance of the equipment.	
ISG (Improved Sub grade)/ Sand filling	Air and dust pollution affecting nearby settlements	• Maintain adequate moisture content of soil during transportation, compaction and handling; • Carry the materials especially loose soil and sand with adequate cover.	
Setting up and operation of	Possible degradation of the air quality by the suspended particles and	• Locate plant away from residential settlements; • Consider use of emulsified bitumen.	

Activity / Issues	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
asphalt plant	increase of the noise level from asphalt plant affecting nearby settlements;		Contractor Monitoring by - ULB, LGED
	Possible water pollution by bitumen and solvents;	• Avoid spills and proper collection and disposal of the generated spills.	
	Possible preparation of the bitumen in open air and using of charcoal and wood as fuel	• Strictly prohibit bitumen preparation in the open air and use of charcoal and wood as fuel.	
Cutting and welding of the reinforcement	Noise pollution due to rod cutter and welding machine if any	• Avoid using of rod cutter and wielding machine at night; • Avoid prolonged exposure to noise (produced by equipment) by workers.	
	Potential health and safety risks from rod cutter and welding machine if any	• Ensure use of the personal protective equipment's (helmet, goggles, gloves, safety boot); • Availability and access to first-aid equipment and medical supplies in case of any accidents.	
RCC (reinforcement cement concrete) work	Air pollution due to black smoke emission from concrete mixer machine and vibrator machine	• Regular maintenance of the concrete mixer and vibrator machine to avoid any black smoke emission.	
	Noise nuisance from concrete mixer machine and vibrator machine	• Avoid operation of the concrete mixer and vibrator machine at night; • RCC work should be avoided at schooling time; • Inform local people about casting work and potential impacts.	
Environmental impacts due to the key construction activities and corresponding mitigation measures for the RCC drain and allied works			
Excavation/ Earth work/ Dismantle work for RCC drain	Generation of solid & construction wastes due to the dismantle works; Generation of debris and sediments/ clay soil due to the earth excavation work.	• Disposal of soil and construction wastes at designated dumping site; • Cover exposed earth works with much fabric.	Contractor Monitoring by - ULB, LGED
	Possible damage of roadside infrastructure due to earth excavation for drain construction	• Ensure drum sheet palisading work for shallow depth to stabilize the structure; • Ensure plunk palisading work for shallow depth to stabilize the structure; • Ensure bolly drive or similar protective works to stabilize the structure.	
	Accidents	• Operate the hydraulic excavator carefully; • Operate the hammer carefully for the dismantle work.	
	Air pollution	• Regular maintenance of the equipment to avoid black smoke emission.	

Activity / Issues	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
Back filling work for drain	Air and dust pollution affecting nearby settlements	• Maintain adequate moisture content of soil during transportation, compaction and handling; • Carry the materials especially loose soil and sand with adequate cover.	Contractor Monitoring by - ULB, LGED
Cutting and welding of the reinforcement	Noise pollution due to rod cutter and welding machine if any	• Avoid using of rod cutter and wielding machine at night; • Avoid prolonged exposure to noise (produced by equipment) by workers.	
	Potential health and safety risks from rod cutter and welding machine if any	• Ensure use of the personal protective equipment's (helmet, goggles, gloves, safety boot); • Availability and access to first-aid equipment and medical supplies in case of any accidents.	
RCC (reinforcement cement concrete) work	Air pollution due to black smoke emission from concrete mixer machine and vibrator machine	• Regular maintenance of the concrete mixer and vibrator machine to avoid any black smoke emission.	
	Noise nuisance from concrete mixer machine and vibrator machine	• Avoid operation of the concrete mixer and vibrator machine at night; • RCC work should be avoided at schooling time; • Inform local people about casting work and potential impacts.	
RCC work for piles, grade beam and column (Retaining wall, bridge, culvert if needed)	Air pollution	• Regular maintenance of the concrete mixer and vibrator machine.	
	Noise pollution	• Avoid operation of the concrete mixer and vibrator machine at night.	
Environmental impacts due to the key construction activities and corresponding mitigation measures for the public space enhancement to improve sustainability of amenities and revenue-generating infrastructures (e.g., bus terminals, kitchen markets, community centers, super markets, public toilets, public place/parks, municipal buildings and allied works			
Removing of the existing infrastructures and site clearing work	Potential health and safety risk and accidents	• Electric power and all services should be shut off within the structure before demolition works to be started; • Site should be fenced-off as much as; • Ensure use of the personal protective equipment where applicable; • Ensure careful operation of the machineries and equipment.	Contractor Monitoring by - ULB, LGED
	Generation of construction, solid wastes and noise nuisance	• Demolition work should avoid at night time and should follow normal working hour; • The demolition works shall be taken not any nuisance by way of noise and dust to the surrounding environment; • Ensure re-use of the materials and disposal of the wastes at the designated dumping site;	

Activity / Issues	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
		• No wastes materials and debris shall be burned on the site; • No encroachment of demolition wastes on adjacent road side area and any private property; • Cover the exposed loose wastes with much fabric.	Contractor Monitoring by - ULB, LGED
Scarifying of the existing pavement and filling, leveling and compaction work	Generation of loose soil due to the scarifying work	• Disposal of soil and construction wastes at the designated dumping site;	
	Accidents	• Carefully handle the equipment.	
	Air and dust pollution affecting nearby settlement	• Regular maintenance of the equipment; • Maintain adequate moisture content of soil and sand during transportation, compaction and handling; • Carry the materials especially loose soil and sand with adequate cover.	
Cutting and welding of the reinforcement	Noise pollution due to rod cutter and welding machine if any	• Avoid using of rod cutter and wielding machine at night; • Avoid prolonged exposure to noise (produced by equipment) by workers.	
	Potential health and safety risks from rod cutter and welding machine if any	• Ensure use of the personal protective equipment's (helmet, ear plug, goggles, gloves, safety boot); • Availability and access to first-aid equipment and medical supplies in case of any accidents.	
RCC (reinforcement cement concrete) work	Air pollution due to black smoke emission from concrete mixer machine and vibrator machine	• Regular maintenance of the concrete mixer and vibrator machine to avoid any black smoke emission.	
	Noise nuisance from concrete mixer machine and vibrator machine	• Avoid operation of the concrete mixer and vibrator machine at night; • RCC work should be avoided at schooling time; • Inform local people about casting work and potential impacts.	
- Fitting and fixing of the sanitary and electrical accessories; - Setting up electrical connection	Potential health and safety risks due to drill machine and hammer.	• Ensure use of the PPEs as per requirement.	
Environmental impacts due to the key construction activities and corresponding mitigation measures for Street light			

Activity / Issues	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
Setting up the pole and electrical connection	• Potential health and safety risks	• Inform the local authority to switch off power during connection; • Ensure use of the PPEs.	Contractor Monitoring by - ULB, LGED
Source of electricity and equipment	• Reduce of resource i.e. use of electricity	• Provision of renewable energy (solar panel electrification) and use of environmentally friendly equipment (LED bulb rather than CFL bulb).	

Table c: *Generic Environmental Impacts during Operational Phase and Corresponding Mitigation and Enhancement Measures*

Activity / Issues	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
Operation of the urban roads and allied works	- Increase in traffic speed and accidents; - Increased traffic congestion due to movement of increased number of vehicles; - Possible road damage due to movement of heavy vehicles, spillage of water to bitumen road surface.	• Better traffic management; • Avoid movement of heavy loaded vehicles that may exceed the load carrying capacity of the road; • Avoiding spillage of water on road from vehicles carrying fish/ fresh produce (through monitoring, creation of awareness).	Monitoring - ULB, LGED
	Increased air and noise pollution affecting surrounding areas	• Traffic management, increased vehicle inspection	
Operation of RCC drain and allied works	Pollution of downstream water body due to disposal of polluted water from the drain	• Ensure installation of septic tank by the household people in all establishment; • Stop connecting sanitation facilities to storm drain directly.	
	Possible backflow of water through drainage canal causing water logging	• Proper maintenance and cleaning of the drain and outfall (khals/canals, lowland ditches) on regular basis.	
	Possible degradation of the water quality	• Raising awareness among the beneficiaries, "Do not through solid waste, plastics and sanitary waste into the water body".	
Operation of RCC box culverts	Blockage of the water passing passage due to disposal of solid waste/ debris	• Creation of awareness; stop throwing of the wastes materials in to the water bodies by the community people; • Regular maintenance / cleaning at both sides of the culverts and beneath the culverts.	

Activity / Issues	Potentials Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
Operation and maintenance for street light	Accident due to collapse of the arms, electric bulbs and poles;	• Monthly checking and maintenance of the arms, switch box, electric bulbs; if needed; • Provision of automatic shut-down the switch, lamps during thunder storm and other natural disasters.	
	Traffic congestion, traffic problems for maintenance works;	• Schedule deliveries of materials/ equipment during off-peak hours;	
	Beneficial impact on employment generation for maintenance works.	• Engage local people for the maintenance activities.	
Solid and liquid waste disposal from kitchen market/ bus terminal/ community centers/ super markets/ public toilets/ municipal buildings	Environmental/ water pollution; health risks Clogging of drainage lines	• Proper SWM in markets/ terminals/ community centers/ public toilets; • regular maintenance of septic tank, drains	

Annex J
Details of the ESCoPs

ESCoP 1: Waste Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
General Waste	Soil and water pollution from the improper management of wastes and excess materials from the construction sites.	The Contractor shall • Develop waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food waste etc.) prior to commencing construction and submit to DSM for approval. • Organize disposal of all wastes generated during construction in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact. • Minimize the production of waste materials by 3R (Reduce, Recycle and Reuse) approach. • Segregate and reuse or recycle all the wastes, wherever practical. • Prohibit burning of solid waste • Collect and transport non-hazardous wastes to all the approved disposal sites. Vehicles transporting solid waste shall be covered with tarps or nets to prevent spilling waste along the route • Train and instruct all personnel in waste management practices and procedures as a component of the environmental induction process. • Provide refuse containers at each worksite. • Request suppliers to minimize packaging where practicable. • Place a high emphasis on good housekeeping practices. • Maintain all construction sites in a cleaner, tidy and safe condition and provide and maintain appropriate facilities as temporary storage of all wastes before transportation and final disposal.
Hazardous Waste	Health hazards and environmental impacts due to improper waste management practices	The Contractor shall • Collect chemical wastes in 200 liter drums (or similar sealed container), appropriately labeled for safe transport to an approved chemical waste depot. • Store, transport and handle all chemicals avoiding potential environmental pollution. • Store all hazardous wastes appropriately in

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		bunded areas away from water courses. • Make available Material Safety Data Sheets (MSDS) for hazardous materials on-site during construction. • Collect hydrocarbon wastes, including lube oils, for safe transport off-site for reuse, recycling, treatment or disposal at approved locations. • Construct concrete or other impermeable flooring to prevent seepage in case of spills.

ESCoP 2: Fuels and Hazardous Substances Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Fuels and hazardous goods	Materials used in construction have a potential to be a source of contamination. Improper storage and handling of fuels, lubricants, chemicals and hazardous goods/materials on-site, and potential spills from these goods may harm the environment or health of construction workers.	The Contractor shall • Prepare spill control procedures and submit the plan for DSM approval. • Train the relevant construction personnel in handling of fuels and spill control procedures. • Store dangerous goods in bunded areas on a top of a sealed plastic sheet away from watercourses. • Refueling shall occur only within bunded areas. • Make available MSDS for chemicals and dangerous goods on-site. • Transport waste of dangerous goods, which cannot be recycled, to a designated disposal site approved by DoE. • Provide absorbent and containment material (e.g., absorbent matting) where hazardous material are used and stored and personnel trained in the correct use. • Provide protective clothing, safety boots, helmets, masks, gloves, goggles, to the construction personnel, appropriate to materials in use. • Make sure all containers, drums, and tanks that are used for storage are in good condition and are labeled with expiry date. Any container, drum, or tank that is dented, cracked, or rusted might eventually leak. Check for leakage regularly to identify potential problems before they occur. • Store hazardous materials above flood plain level. • Put containers and drums in temporary storages in clearly marked areas, where they will not be run over by vehicles or heavy machinery. The area shall preferably slope or

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		drain to a safe collection area in the event of a spill. • Put containers and drums in permanent storage areas on an impermeable floor that slopes to a safe collection area in the event of a spill or leak. • Take all precautionary measures when handling and storing fuels and lubricants, avoiding environmental pollution. • Avoid the use of material with greater potential for contamination by substituting them with more environmentally friendly materials. • Return the gas cylinders to the supplier. However, if they are not empty prior to their return, they must be labeled with the name of the material they contained or contain, information on the supplier, cylinder serial number, pressure, their last hydrostatic test date, and any additional identification marking that may be considered necessary.

ESCoP 3: Water Resources Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Hazardous Material and Waste	Water pollution from the storage, handling and disposal of hazardous materials and general construction waste, and accidental spillage.	The Contractor shall • Follow the management guidelines proposed in EC0Ps 1 and 2. • Minimize the generation of sediment, oil and grease, excess nutrients, organic matter, litter, debris and any form of waste (particularly petroleum and chemical wastes). These substances must not enter waterways, storm water systems or underground water tables.
Discharge from Construction sites	During construction both surface and groundwater quality may be deteriorated due to construction activities in the river, sewerages from construction sites and work camps. The construction works will modify groundcover and topography changing the surface water drainage	The Contractor shall • Install temporary drainage works (channels and bunds) in areas required for sediment and erosion control and around storage areas for construction materials • Install temporary sediment basins, where appropriate, to capture sediment-laden run-off from site • Divert runoff from undisturbed areas around the construction site • Stockpile materials away from drainage lines • Prevent all solid and liquid wastes entering

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
	patterns of the area including infiltration and storage of storm water. These changes in hydrological regime lead to increased rate of runoff, increase in sediment and contaminant loading, increased flooding, groundwater contamination, and effect habitat of fish and other aquatic biology.	waterways by collecting solid waste, oils, chemicals, bitumen spray waste and wastewaters from brick, concrete and asphalt cutting where possible and transport to an approved waste disposal site or recycling depot • Wash out ready-mix concrete agitators and concrete handling equipment at washing facilities off site or into approved bunded areas on site. Ensure that tires of construction vehicles are cleaned in the washing bay (constructed at the entrance of the construction site) to remove the mud from the wheels. This shall be done in every exit of each construction vehicle to ensure the local roads are kept clean.
Soil Erosion and siltation	Soil erosion and dust from the material stockpiles will increase the sediment and contaminant loading of surface water bodies.	The Contractor shall • Stabilize the cleared areas not used for construction activities with vegetation or appropriate surface water treatments as soon as practicable following earthwork to minimize erosion • Ensure that roads used by construction vehicles are swept regularly to remove sediment • Water the material stockpiles, access roads and bare soils on an as required basis to minimize dust. Increase the watering frequency during periods of high risk (e.g. high winds)
Construction activities in water bodies	Construction works in the water bodies will increase sediment and contaminant loading, and effect habitat of fish and other aquatic biology.	The Contractor shall • Dewater sites by pumping water to a sediment basin prior to release off site – do not pump directly off site • Monitor the water quality in the runoff from the site or areas affected by dredge plumes, and improve work practices as necessary • Protect water bodies from sediment loads by silt screen or bubble curtains or other barriers • Minimize the generation of sediment, oil and grease, excess nutrients, organic matter, litter, debris and any form of waste (particularly petroleum and chemical wastes). These substances must not enter waterways, storm water systems or underground water tables. • Use environment friendly and nontoxic slurry during construction of piles to discharge into the river. • Reduce infiltration of contaminated drainage through storm water management design

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		• Do not discharge cement and water curing used for cement concrete directly into water courses and drainage inlets.
Drinking water	Groundwater at shallow depths is contaminated with arsenic and hence not suitable for drinking purposes.	The Contractor shall • Pumping of groundwater shall be from deep aquifers of more than 300 m to supply arsenic free water. Safe and sustainable discharges are to be ascertained prior to selection of pumps. • Tube wells will be installed with due regard for the surface environment, protection of groundwater from surface contaminants, and protection of aquifer cross contamination • All tube wells, test holes, monitoring wells that are no longer in use or needed shall be properly decommissioned.
	Depletion and pollution of groundwater resources	• Install monitoring wells both upstream and downstream areas near construction yards and construction camps to regularly monitor the water quality and water levels. • Protect groundwater supplies of adjacent lands

ESCoP 4: Drainage Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Excavation and earth works, and construction yards	Lack of proper drainage for rainwater/liquid waste or wastewater owing to the construction activities harms environment in terms of water and soil contamination, and mosquito growth.	The Contractor shall • Prepare a program for prevent/avoid standing waters, which DSM will verify in advance and confirm during implementation • Provide alternative drainage for rainwater if the construction works/earth-fillings cut the established drainage line • Establish local drainage line with appropriate silt collector and silt screen for rainwater or wastewater connecting to the existing established drainage lines already there • Rehabilitate road drainage structures immediately if damaged by contractors' road transports. • Build new drainage lines as appropriate and required for wastewater from construction yards connecting to the available nearby recipient water bodies. Ensure wastewater quality conforms to the relevant standards provided by DoE, before it being discharged into the recipient water bodies. • Ensure the internal roads/hard surfaces in the construction yards/construction camps that generate has storm water drainage to

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		accommodate high runoff during downpour and that there is no stagnant water in the area at the end of the downpour. • Construct wide drains instead of deep drains to avoid sand deposition in the drains that require frequent cleaning. • Provide appropriate silt collector and silt screen at the inlet and manholes and periodically clean the drainage system to avoid drainage congestion. • Protect natural slopes of drainage channels to ensure adequate storm water drains. • Regularly inspect and maintain all drainage channels to assess and alleviate any drainage congestion problem. • Reduce infiltration of contaminated drainage through storm water management design.
Ponding of water	Health hazards due to mosquito breeding	The Contractor shall • Do not allow ponding/storage of water especially near the waste storage areas and construction camps • Discard all the storage containers that are capable of storing of water, after use or store them in inverted position.

ESCoP 5: Soil Quality Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Filling of Sites with dredge spoils	Soil contamination will occur from drainage of dredged spoils	The Contractor shall • Ensure that dredged sand used for land filling shall be free of pollutants. Prior to filling, sand quality shall be tested to confirm whether soil is pollution free. Sediments shall be properly compacted. Top layer shall be the 0.5 m thick clay on the surface and boundary slopes along with grass. Side Slope of Filled Land of 1:2 shall be constructed by suitable soils with proper compaction as per design. Slope surface shall be covered by top soils/ cladding materials (0.5m thick) and grass turfing with suitable grass. • Leaching from the sediments shall be contained to seep into the subsoil or shall be discharged into settling lagoons before final disposal. • No sediment laden water in the adjacent lands near the construction sites, and/or wastewater of suspended materials excessive of 200mg/l from dredge spoil storage/use area in the

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		adjacent agricultural lands.
Storage of hazardous and toxic chemicals	Spillage of hazardous and toxic chemicals will contaminate the soils	The Contractor shall • Strictly manage the wastes management plans proposed in ECP1 and storage of materials in ECP2 • Construct appropriate spill contaminant facilities for all fuel storage areas • Establish and maintain a hazardous materials register detailing the location and quantities of hazardous substances including the storage, use of disposals • Train personnel and implement safe work practices for minimizing the risk of spillage • Identify the cause of contamination, if it is reported, and contain the area of contamination. The impact may be contained by isolating the source or implementing controls around the affected site • Remediate the contaminated land using the most appropriate available method to achieve required commercial/industrial guideline validation results.
Construction material stock piles	Erosion from construction material stockpiles may contaminate the soils	The Contractor shall • Protect the toe of all stockpiles, where erosion is likely to occur, with silt fences, straw bales or bunds.

ESCoP 6: Erosion and Sediment Control

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Clearing of Construction sites	Cleared areas and slopes are susceptible for erosion of top soils that affects the growth of vegetation which causes ecological imbalance	The Contractor shall • Reinstate and protect cleared areas as soon as possible. • Mulch to protect batter slopes before planting • Cover unused area of disturbed or exposed surfaces immediately with mulch/grass turfings/tree plantations.
Construction activities and material stockpiles	The impact of soil erosion are (i) Increased run off and sedimentation causing a greater flood hazard to the downstream, (ii) destruction of aquatic environment in nearby lakes, streams, and reservoirs caused by erosion and/or deposition of sediment damaging the	The Contractor shall • Locate stockpiles away from drainage lines • Protect the toe of all stockpiles, where erosion is likely to occur, with silt fences, straw bales or bunds • Remove debris from drainage paths and sediment control structures • Cover the loose sediments and water them if required • Divert natural runoff around construction areas prior to any site disturbance • Install protective measures on site prior to

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
	spawning grounds of fish, and (iii) destruction of vegetation by burying or gullying.	construction, for example, sediment traps • Control drainage through a site in protected channels or slope drains • Install 'cut off drains' on large cut/fill batter slopes to control water runoff speed and hence erosion • Observe the performance of drainage structures and erosion controls during rain and modify as required.

ESCoP 7: Top Soil Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Land clearing and earth works	Earthworks will impact the fertile top soils that are enriched with nutrients required for plant growth or agricultural development	The Contractor shall • Strip the top soil to a depth of 15 cm and store in stock piles of height not exceeding 2m. • Remove unwanted materials from top soil like grass, roots of trees and similar others. • The stockpiles will be done in slopes of 2:1 to reduce surface runoff and enhance percolation through the mass of stored soil. • Locate topsoil stockpiles in areas outside drainage lines and protect from erosion. • Construct diversion channels and silt fences around the topsoil stockpiles to prevent erosion and loss of topsoil. • Spread the topsoil to maintain the physico-chemical and biological activity of the soil. The stored top soil will be utilized for covering all disturbed area and along the proposed plantation sites • Prior to the re-spreading of topsoil, the ground surface will be ripped to assist the bunding of the soil layers, water penetration and revegetation.
Transport	Vehicular movement outside ROW or temporary access roads will affect the soil fertility of the agricultural lands	The Contractor shall • Limit equipment and vehicular movements to within the approved construction zone • Construct temporary access tracks to cross concentrated water flow lines at right angles • Plan construction access to make use, if possible, of the final road alignment • Use vehicle-cleaning devices, for example, ramps or wash down areas.

ESCoP 8: Topography and Landscaping

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines

Land clearing and earth works	Flood plains of the existing Project area will be affected by the construction of various project activities. Construction activities especially earthworks will change topography and disturb the natural rainwater/flood water drainage as well as will change the local landscape.	The Contractor shall • Ensure the topography of the final surface of all raised lands (construction yards, approach roads, access roads, bridge end facilities, etc.) are conducive to enhance natural draining of rainwater/flood water; • Keep the final or finished surface of all the raised lands free from any kind of depression that insists water logging • Undertake mitigation measures for erosion control/prevention by grass-turfing and tree plantation, where there is a possibility of rain-cut that will change the shape of topography. • Cover immediately the uncovered open surface that has no use of construction activities with grass-cover and tree plantation to prevent soil erosion and bring improved landscaping.

ESCoP 9: Sand Extraction

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Sand extraction	Sand extraction can potentially impact the aquatic habitat, water quality, and key aquatic species and their food availability.	The Contractor shall • not extract sand from the river bed in long continuous stretches; alternate patches of river bed will be left undisturbed to minimize the potentially negative impacts on the aquatic habitat. • not collect large quantities of sand from any single location • not excavate deeper than 3 m at any single location. • not carry out sand extraction near chars that have sensitive Habitats • not carry out sand extraction during the night particularly near the chars • obtain approval from DSM before starting sand extraction from any location. • carry out sand extraction from sand bars to the extent possible. • maintain record of all sand extraction (quantities, location shown on map, timing, any sighting of key species) • provide silt fences, sediment barriers or other devices around the extraction areas to prevent migration of sediment rich water in to the river channels. • refuel of barges and boats with a proper care to avoid any spills. • make available spill kits and other absorbent material at refueling points on the barges.

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		• properly collect, treat and dispose the bilge water from of barges, and boats. • regularly service all waterborne plant as per the manufacturer's guidelines and be inspected daily prior to operation. DSM will: • carry out survey of the area prior to sand extraction • identify any sensitive receptors/habitats (eg, turtle nesting area, bird colony) at or near the proposed sand extraction locations. • determine 'no-go' areas for sand extraction, based upon the above survey, • monitor the activity to ensure that the contractor complies with the conditions described earlier. • survey the area after sand extraction to identify any leftover impacts.

ESCoP 10: Air Quality Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Construction vehicular traffic	Air quality can be adversely affected by vehicle exhaust emissions and combustion of fuels.	The Contractor shall • Fit vehicles with appropriate exhaust systems and emission control devices. Maintain these devices in good working condition. • Operate the vehicles in a fuel-efficient manner • Cover haul vehicles carrying dusty materials moving outside the construction site Impose speed limits on all vehicle movement at the worksite to reduce dust emissions • Control the movement of construction traffic • Water construction materials prior to loading and transport • Service all vehicles regularly to minimize emissions • Limit the idling time of vehicles not more than 2 minutes.
Construction machinery	Air quality can be adversely affected by emissions from machinery and combustion of fuels.	The Contractor shall • Fit machinery with appropriate exhaust systems and emission control devices. Maintain these devices in good working condition in accordance with the specifications defined by their manufacturers to maximize combustion efficiency and minimize the contaminant emissions. Proof or maintenance register shall be required by the equipment suppliers and contractors/subcontractors

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		• Focus special attention on containing the emissions from generators • Machinery causing excess pollution (e.g. visible smoke) will be banned from construction sites • Service all equipment regularly to minimize emissions • Provide filtering systems, duct collectors or humidification or other techniques (as applicable) to the concrete batching and mixing plant to control the particle emissions in all its stages, including unloading, collection, aggregate handling, cement dumping, circulation of trucks and machinery inside the installations
Construction activities	Dust generation from construction sites, material stockpiles and access roads is a nuisance in the environment and can be a health hazard.	The Contractor shall • Water the material stockpiles, access roads and bare soils on an as required basis to minimize the potential for environmental nuisance due to dust. Increase the watering frequency during periods of high risk (e.g. high winds). Stored materials such as gravel and sand shall be covered and confined to avoid their being wind-drifted • Minimize the extent and period of exposure of the bare surfaces • Reschedule earthwork activities or vegetation clearing activities, where practical, if necessary to avoid during periods of high wind and if visible dust is blowing off-site • Restore disturbed areas as soon as practicable by vegetation/grass-turfing • Store the cement in silos and minimize the emissions from silos by equipping them with filters. • Establish adequate locations for storage, mixing and loading of construction materials, in a way that dust dispersion is prevented because of such operations • Crushing of rocky and aggregate materials shall be wet-crushed, or performed with particle emission control systems.

ESCoP 11: Noise and Vibration Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Construction vehicular traffic	Noise quality will be deteriorated due to	The Contractor shall • Maintain all vehicles in order to keep it in

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
	vehicular traffic	good working order in accordance with manufactures maintenance procedures • Make sure all drivers will comply with the traffic codes concerning maximum speed limit, driving hours, etc. • Organize the loading and unloading of trucks, and handling operations for the purpose of minimizing construction noise on the work site
Construction machinery	Noise and vibration may have an impact on people, property, fauna, livestock and the natural environment.	The Contractor shall • Appropriately site all noise generating activities to avoid noise pollution to local residents • Use the quietest available plant and equipment • Modify equipment to reduce noise (for example, noise control kits, lining of truck trays or pipelines) • Maintain all equipment in order to keep it in good working order in accordance with manufactures maintenance procedures. Equipment suppliers and contractors shall present proof of maintenance register of their equipment. • Install acoustic enclosures around generators to reduce noise levels. • Fit high efficiency mufflers to appropriate construction equipment • Avoid the unnecessary use of alarms, horns and sirens.
Construction activities	Noise and vibration may have an impact on people, property, fauna, livestock and the natural environment.	The Contractor shall • Notify adjacent landholders prior any typical noise events outside of daylight hours • Educate the operators of construction equipment on potential noise problems and the techniques to minimize noise emissions • Employ best available work practices on-site to minimize occupational noise levels • Install temporary noise control barriers where appropriate • Notify affected people if major noisy activities will be undertaken, e. g. pile driving • Plan activities on site and deliveries to and from site to minimize impact • Monitor and analyze noise and vibration results and adjust construction practices as required. • Avoid undertaking the noisiest activities, where possible, when working at night near the residential areas.

ESCoP 12: Protection of Flora

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Vegetation clearance	Local flora is important to provide shelters for the birds, offer fruits and/or timber/fire wood, protect soil erosion and overall keep the environment very friendly to human living. As such damage to flora has wide range of adverse environmental impacts.	The Contractor shall • Reduce disturbance to surrounding vegetation • Use appropriate type and minimum size of machine to avoid disturbance to adjacent vegetation. • Get approval from supervision consultant for clearance of vegetation. • Make selective and careful pruning of trees where possible to reduce need of tree removal. • Control noxious weeds by disposing of at designated dump site or burn on site. • Clear only the vegetation that needs to be cleared in accordance with the plans. These measures are applicable to both the construction areas as well as to any associated activities such as sites for stockpiles, disposal of fill and construction of diversion roads, etc. • Do not burn off cleared vegetation – where feasible, chip or mulch and reuse it for the rehabilitation of affected areas, temporary access tracks or landscaping. Mulch provides a seed source, can limit embankment erosion, retains soil moisture and nutrients, and encourages regrowth and protection from weeds. • Return topsoil and mulched vegetation (in areas of native vegetation) to approximately the same area of the roadside it came from. • Avoid work within the drip-line of trees to prevent damage to the tree roots and compacting the soil. • Minimize the length of time the ground is exposed or excavation left open by clearing and re-vegetate the area at the earliest practically possible. • Ensure excavation works occur progressively and revegetation done at the earliest • Provide adequate knowledge to the workers regarding nature protection and the need of avoid felling trees during construction • Supply appropriate fuel in the work caps to prevent fuel wood collection

ESCoP 13: Protection of Fauna

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Construction activities	The location of construction activities can result in the loss of wild life habitat and habitat quality.	The Contractor shall • Limit the construction works within the designated sites allocated to the contractors • Check the site for animals trapped in, or in danger from site works and use a qualified person to relocate the animal.
	Impact on migratory birds, its habitat and its active nests	The Contractor shall • Not be permitted to destruct active nests or eggs of migratory birds • Minimize the tree removal during the bird breeding season. If works must be continued during the bird breeding season, a nest survey will be conducted by a qualified biologist prior to commence of works to identify and located active nests • Minimize the release of oil, oil wastes or any other substances harmful to migratory birds to any waters or any areas frequented by migratory birds.
Vegetation clearance	Clearance of vegetation may impact shelter, feeding and/or breeding and/or physical destruction and severing of habitat areas	The Contractor shall • Restrict the tree removal to the minimum required. • Retain tree hollows on site, or relocate hollows, where appropriate • Leave dead trees where possible as habitat for fauna • Fell the hollow bearing trees in a manner which reduces the potential for fauna mortality. Felled trees will be inspected after felling for fauna and if identified and readily accessible will be removed and relocated or rendered assistance if injured. After felling, hollow bearing trees will remain unmoved overnight to allow animals to move of their own volition.
Construction camps	Illegal poaching	The Contractor shall • Provide adequate knowledge to the workers regarding protection of flora and fauna, and relevant government regulations and punishments for illegal poaching.

ESCoP 14: Protection of Fisheries

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Construction activities in River and Floodplain Water	The main potential impacts to fisheries are hydrocarbon spills and leaks from riverine transport and disposal of	The Contractor shall • Ensure the riverine transports, vessels and ships are well maintained and do not have oil leakage to contaminate river water. • Contain oil immediately on river in case of

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
	wastes into the river and floodplain water	accidental spillage from vessels and ships and in this regard, make an emergency oil spill containment plan to be supported with enough equipment, materials and human resources • Do not dump wastes, be it hazardous or non-hazardous into the nearby water bodies or in the river.
	The main potential impacts to aquatic flora and fauna River are increased suspended solids from earthworks erosion, sanitary discharge from work camps, and hydrocarbon spills	The Contractor shall • follow mitigation measures proposed in ECoP 3 : Water Resources Management and EC4: Drainage Management
Construction activities on the land	Filling of ponds for site preparation will impact the fishes	The Contractor shall • Inspect any area of a water body containing fish that is temporarily isolated for the presence of fish, and all fish shall be captured and released unharmed in adjacent fish habitat • Install and maintain fish screens etc. on any water intake with drawing water from any water body that contain fish.

ESCoP 15: Road Transport and Road Traffic Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Construction activities	The urban infrastructure construction / rehabilitation works may traffic congestion, effect on traffic and pedestrian safety	The Contractor shall • Ensure schedule deliveries of materials/ equipment during off-peak hours; • Place traffic/ cautionary sign to avoid undue traffic congestion and accidents; • Selection of alternative routes, where possible for sub-project vehicles; • Depute flagman for traffic control; • Arrange for signal light at night; • Inform the local people about the subproject activities.
	Accidents	The Contractor shall • Prepare an emergency plan for dealing with accidents causing accidental sinking of the vessels and ships • Ensure sufficient equipment and staffs available to execute the emergency plans

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		• Provide appropriate lighting to barges and construction vessels.

ESCoP 16: Construction Camp Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Siting and Location of construction camps	Campsites for construction workers are the important locations that have significant impacts such as health and safety hazards on local resources and infrastructure of nearby communities.	The Contractor shall • Locate the construction camps at areas which are acceptable from environmental, cultural or social point of view. • Consider the location of construction camps away from communities in order to avoid social conflict in using the natural resources such as water or to avoid the possible adverse impacts of the construction camps on the surrounding communities. • Submit to the DSM for approval a detailed layout plan for the development of the construction camp showing the relative locations of all temporary buildings and facilities that are to be constructed together with the location of site roads, fuel storage areas (for use in power supply generators), solid waste management and dumping locations, and drainage facilities, prior to the development of the construction camps. • Local authorities responsible for health, religious and security shall be duly informed on the set up of camp facilities so as to maintain effective surveillance over public health, social and security matters
Construction Camp Facilities	Lack of proper infrastructure facilities, such as housing, water supply and sanitation facilities will increase pressure on the local services and generate substandard living standards and health hazards.	The Contractor shall provide the following facilities in the campsites: • Adequate housing for all workers • Safe and reliable water supply. Water supply from deep tube wells of 300 m depth that meets the national standards • Hygienic sanitary facilities and sewerage system. The toilets and domestic waste water will be collected through a common sewerage. Provide separate latrines and bathing places for males and females with total isolation by wall or by location. The minimum number of toilet facilities required is one toilet for every ten persons. • Treatment facilities for sewerage of toilet and domestic wastes • Storm water drainage facilities. Both sides of roads are to be provided with shallow v drains

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		to drain off storm water to a silt retention pond which shall be sized to provide a minimum of 20 minutes retention of storm water flow from the whole site. Channel all discharge from the silt retention pond to natural drainage via a grassed swale at least 20 meters in length with suitable longitudinal gradient. • Paved internal roads. Ensure with grass/vegetation coverage to be made of the use of top soil that there is no dust generation from the loose/exposed sandy surface. Pave the internal roads of at least haring-bond bricks to suppress dusts and to work against possible muddy surface during monsoon. • Provide child crèches for women working construction site. The crèche shall have facilities for dormitory, kitchen, indoor and outdoor play area. Schools shall be attached to these crèches so that children are not deprived of education whose mothers are construction workers • Provide in-house community/common entertainment facilities dependence of local entertainment outlets by the construction camps to be discouraged/prohibited to the extent possible.
Disposal of waste	Management of wastes is crucial to minimize impacts on the environment	The Contractor shall • Ensure proper collection and disposal of solid wastes within the construction camps • Insist waste separation by source; organic wastes in one pot and inorganic wastes in another pot at household level. • Store inorganic wastes in a safe place within the household and clear organic wastes on daily basis to waste collector. Establish waste collection, transportation and disposal systems with the manpower and equipment/vehicles needed. • Dispose organic wastes in a designated safe place on daily basis. At the end of the day cover the organic wastes with a thin layer of sand so that flies, mosquitoes, dogs, cats, rats, are not attracted. One may dig a large hole to put organic wastes in it; take care to protect groundwater from contamination by leachate formed due to decomposition of wastes. Cover the bed of the pit with impervious layer of materials (clayey or thin concrete) to protect groundwater from contamination.

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		• Locate the garbage pit/waste disposal site min 500 m away from the residence so that peoples are not disturbed with the odor likely to be produced from anaerobic decomposition of wastes at the waste dumping places. Encompass the waste dumping place by fencing and tree plantation to prevent children to enter and play with. • Do not establish site specific landfill sites. All solid waste will be collected and removed from the work camps and disposed in approval waste disposal sites.
Fuel supplies for cooking purposes	Illegal sourcing of fuel wood by construction workers will impact the natural flora and fauna	The Contractor shall • Provide fuel to the construction camps for their domestic purpose, in order to discourage them to use fuel wood or other biomass. • Made available alternative fuels like natural gas or kerosene on ration to the workforce to prevent them using biomass for cooking. • Conduct awareness campaigns to educate workers on preserving the protecting the biodiversity and wildlife of the project area, and relevant government regulations and punishments on wildlife protection.
Health and Hygiene	There will be a potential for diseases to be transmitted including malaria, exacerbated by inadequate health and safety practices. There will be an increased risk of work crews spreading sexually transmitted infections and HIV/AIDS.	The Contractor shall • Provide adequate health care facilities within construction sites. • Provide first aid facility round the clock. Maintain stock of medicines in the facility and appoint fulltime designated first aider or nurse. • Provide ambulance facility for the laborers during emergency to be transported to nearest hospitals. • Initial health screening of the laborers coming from outside areas • Train all construction workers in basic sanitation and health care issues and safety matters, and on the specific hazards of their work • Provide HIV awareness programming, including STI (sexually transmitted infections) and HIV information, education and communication for all workers on regular basis • Complement educational interventions with easy access to condoms at campsites as well as voluntary counseling and testing • Provide adequate drainage facilities throughout the camps to ensure that disease vectors such as stagnant water bodies and

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		puddles do not form. Regular mosquito repellant sprays during monsoon. • Carryout short training sessions on best hygiene practices to be mandatorily participated by all workers. Place display boards at strategic locations within the camps containing messages on best hygienic practices
Safety	In adequate safety facilities to the construction camps may create security problems and fire hazards	The Contractor shall • Provide appropriate security personnel (police / home guard or private security guards) and enclosures to prevent unauthorized entry in to the camp area. • Maintain register to keep a track on a head count of persons present in the camp at any given time. • Encourage use of flameproof material for the construction of labor housing / site office. Also, ensure that these houses/rooms are of sound construction and capable of withstanding wind storms/cyclones. • Provide appropriate type of firefighting equipment suitable for the construction camps • Display emergency contact numbers clearly and prominently at strategic places in camps. • Communicate the roles and responsibilities of laborers in case of emergency in the monthly meetings with contractors
Site Restoration	Restoration of the construction camps to original condition requires demolition of construction camps.	The Contractor shall • Dismantle and remove from the site all facilities established within the construction camp including the perimeter fence and lockable gates at the completion of the construction work. • Dismantle camps in phases and as the work gets decreased and not wait for the entire work to be completed • Give prior notice to the laborers before demolishing their camps/units • Maintain the noise levels within the national standards during demolition activities • Different contractors shall be hired to demolish different structures to promote recycling or reuse of demolished material. • Reuse the demolition debris to a maximum extent. Dispose remaining debris at the designated waste disposal site. • Handover the construction camps with all built facilities as it is if agreement between both parties (contactor and land-owner) has been made so.

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		• Restore the site to its condition prior to commencement of the works or to an agreed condition with the landowner. • Not make false promises to the laborers for future employment in O&M of the project.

ESCoP 17: Cultural and Religious Issues

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Construction activities near religious and cultural sites	Disturbance from construction works to the cultural and religious sites, and contractors lack of knowledge on cultural issues cause social disturbances.	The Contractor shall • Communicate to the public through community consultation and newspaper announcements regarding the scope and schedule of construction, as well as certain construction activities causing disruptions or access restriction. • Do not block access to cultural and religious sites, wherever possible • Restrict all construction activities within the foot prints of the construction sites. • Stop construction works that produce noise (particularly during prayer time) shall there be any mosque/religious/educational institutions close to the construction sites and users make objections. • Take special care and use appropriate equipment when working next to a cultural/religious institution. • Stop work immediately and notify the site manager if, during construction, an archaeological or burial site is discovered. It is an offence to recommence work in the vicinity of the site until approval to continue is given by the DSM/PIU. Provide separate prayer facilities to the construction workers. • Show appropriate behavior with all construction workers especially women and elderly people • Allow the workers to participate in praying during construction time • Resolve cultural issues in consultation with local leaders and supervision consultants • Establish a mechanism that allows local people to raise grievances arising from the construction process. • Inform the local authorities responsible for health, religious and security duly informed before commencement of civil works so as to maintain effective surveillance over public

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		health, social and security matters

ESCoP 18: Worker Health and Safety

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
Best practices	Construction works may pose health and safety risks to the construction workers and site visitors leading to severe injuries and deaths. The population in the proximity of the construction site and the construction workers will be exposed to a number of (i) biophysical health risk factors, (e.g. noise, dust, chemicals, construction material, solid waste, waste water, vector transmitted diseases etc), (ii) risk factors resulting from human behavior (e.g. STD, HIV etc) and (iii) road accidents from construction traffic.	The Contractor shall • Implement suitable safety standards for all workers and site visitors which shall not be less than those laid down on the international standards (e.g. International Labor Office guideline on 'Safety and Health in Construction; World Bank Group's 'Environmental Health and Safety Guidelines') and contractor's own national standards or statutory regulations, in addition to complying with the national standards of the Government of Bangladesh (e.g. `The Bangladesh Labor Code, 2006') • Provide the workers with a safe and healthy work environment, taking into account inherent risks in its particular construction activity and specific classes of hazards in the work areas, • Provide personal protection equipment (PPE) for workers, such as safety boots, helmets, masks, gloves, protective clothing, goggles, full-face eye shields, and ear protection. Maintain the PPE properly by cleaning dirty ones and replacing them with the damaged ones. • Safety procedures include provision of information, training and protective clothing to workers involved in hazardous operations and proper performance of their job • Appoint an environment, health and safety manager to look after the health and safety of the workers • Inform the local authorities responsible for health, religious and security duly informed before commencement of civil works and establishment of construction camps so as to maintain effective surveillance over public health, social and security matters.
	Child and pregnant labor	The Contractor shall • not hire children of less than 14 years of age and pregnant women or women who delivered a child within 8 preceding weeks, in accordance with the Bangladesh Labor Code, 2006
Accidents	Lack of first aid facilities and health care facilities in the immediate vicinity will aggravate the health	• Provide health care facilities and first aid facilities are readily available. Appropriately equipped first-aid stations shall be easily accessible throughout the place of work

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
	conditions of the victims	• Document and report occupational accidents, diseases, and incidents. • Prevent accidents, injury, and disease arising from, associated with, or occurring in the course of work by minimizing, so far as reasonably practicable, the causes of hazards. In a manner consistent with good international industry practice. • Identify potential hazards to workers, particularly those that may be life-threatening and provide necessary preventive and protective measures. • Provide awareness to the construction drivers to strictly follow the driving rules • Provide adequate lighting in the construction area and along the roads
Construction Camps	Lack of proper infrastructure facilities, such as housing, water supply and sanitation facilities will increase pressure on the local services and generate substandard living standards and health hazards.	• The Contractor shall provide the following facilities in the campsites to improve health and hygienic conditions as mentioned in ECoP 17 Construction Camp Management • Adequate ventilation facilities • Safe and reliable water supply. Water supply from deep tube wells that meets the national standards • Hygienic sanitary facilities and sewerage system. The toilets and domestic waste water will be collected through a common sewerage. • Treatment facilities for sewerage of toilet and domestic wastes • Storm water drainage facilities. • Recreational and social facilities • Safe storage facilities for petroleum and other chemicals in accordance with ECoP 2 • Solid waste collection and disposal system in accordance with ECP1. • Arrangement for trainings • Paved internal roads. • Security fence at least 2 m height. • Sick bay and first aid facilities
Water and sanitation facilities at the construction sites	Lack of Water sanitation facilities at construction sites cause inconvenience to the construction workers and affect their personal hygiene.	• The contractor shall provide portable toilets at the construction sites, if about 25 people are working the whole day for a month. Location of portable facilities shall be at least 6 m away from storm drain system and surface waters. These portable toilets shall be cleaned once a day and all the sewerage shall be pumped from the collection tank once a day and shall be brought to the common septic tank for further treatment. • Contractor shall provide bottled drinking water

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures/ Management Guidelines
		facilities to the construction workers at all the construction sites.
Other ECoPs	Potential risks on health and hygiene of construction workers and general public	The Contractor shall follow the following ECPs to reduce health risks to the construction workers and nearby community • ECoP 2: Fuels and Hazardous Goods Management • ECoP 4: Drainage Management • ECoP 10: Air Quality Management • ECoP 11: Noise and Vibration Management • ECoP 15: Road Transport and Road Traffic Management • ECoP 16: River Transport management
Trainings	Lack of awareness and basic knowledge in health care among the construction workforce, make them susceptible to potential diseases.	The Contractor shall • Train all construction workers in basic sanitation and health care issues (e.g., how to avoid malaria and transmission of sexually transmitted infections (STI) HIV/AIDS. • Train all construction workers in general health and safety matters, and on the specific hazards of their work Training shall consist of basic hazard awareness, site specific hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disaster, as appropriate. • Commence the malaria, HIV/AIDS and STI education campaign before the start of the construction phase and complement it with by a strong condom marketing, increased access to condoms in the area as well as to voluntary counseling and testing. • Implement malaria, HIV/AIDS and STI education campaign targeting all workers hired, international and national, female and male, skilled, semi- and unskilled occupations, at the time of recruitment and thereafter pursued throughout the construction phase on ongoing and regular basis. This shall be complemented by easy access to condoms at the workplace as well as to voluntary counseling and testing.

Annex K

Natural Hazards and Disaster Resilency for Infrastructures

A list of major hazards, their impacts and future trends of preselected ULBs which are identified during Feasibility study are shown in the table below.

Table K 1: Major Hazards and Risks

Hazard Type	Major Causes of Hazards	Impact	Future Trend
Floods	• Heavy rain inside and outside of Bangladesh; • Silted riverbeds; • Flood embankment failure; • Haphazard construction of roads/rails, culverts, etc.; and • Topographical causes (for flash flood).	• Impact to health, damage to property, disruption of critical infrastructure, loss of crops, and ecosystem degradation.	• Increased risk of flood during monsoon season; • Increase frequency and change of timing of flood.
Drought	• Topography (uplands) • Soil permeability • Deforestation • Inadequate or low rainfall • Excessive withdrawal of ground water	• Agriculture, Water Resources & Socio Economic	• Unpredictable precipitation Pattern and increase of temperature. increase the risk of drought
Earthquake	• Close to the Shillong Plateau, Dauki Fault borders, Himalayan range and he Indo-Burman Ranges define the eastern marg; • High density of people and buildings; and • Poor quality of infrastructure (low resilient).	• Death and injury, and collapse of infrastructure.	• Unplanned urbanization, and inadequate regulation of building design and construction.
Bank Erosion/ Collapse	• Embankment and levee failure; • Meandering and braided RUTDPs; • Too many confluences; • Silted RUTDPbeds and narrowing channels; • Cross border RUTDPbank protection activities; • Inadequate, improper & lack of timely protection measures; and • Weak ground coverage & dense settlements.	• Loss of agricultural land, human settlement and infrastructures; and • Rural urban migration.	• Projected increases in extreme water level; and • Water flows may increase erosion.
Cyclone and Tidal Surge	• Geographic location of land & sea; • Funnel shaped coast; • Deltaic lowlands; • Broken coast with River & canals; • Dense settlements.	• Risk of injury; • Damage to property; • Disruption of critical infrastructure; and • Loss of ecosystem.	• Increased frequency and intensity.

Sea Level Rise	• Global warming of the atmosphere; • Deltaic location and very low elevation; • Funnel shaped coast; and	• Saline water intrusion; • Loss of agricultural productivity; and • Increased flood.	• 1.5 meter sea level rise will submerge 16% of Bangladesh and directly affect 17 million people.
Hillside Landslide	• Loose sand and fragile shale geological setting; • Excessive downpour; and • Cutting of hills.	• Injury and loss of lives; and. • Damage to infrastructure.	• Unplanned urbanization; and • Inadequate regulation of building design and construction.

Source: Field data collected by the Consultants of Feasibility Study carried by Ramboll Denmark A/S Denmark and Aqua Consultant and Associates Ltd.

K.1. Climate Sensitivity & Hazard Screening for Environmental Impacts Identification

Most of the subprojects are expected to have minimal potential environmental impacts and could be categorized as Orange following the Environment Conservation Rules 2023.

Table K2: Subproject Categorization and Assessment Type

Sl.	Subproject	Category	Assessment Type	Remarks
1	Kitchen market	Orange	IEE[1]/ESA[2] and ESMP[3] based on agreed framework.	Not listed in ECR 2023[4]
2	Supermarket	Orange	IEE/ESA and ESMP based on agreed framework.	Not listed in ECR 2023
3	Roads + Drains + Footpaths + Streetlights	Orange	IEE/ESA and ESMP based on agreed framework.	Listed in ECR 2023
4	Community Centre	Orange	IEE/ESA and ESMP based on agreed framework.	Not listed in ECR 2023
5	Bus Ternminal	Orange	IEE/ESA and ESMP based on agreed framework.	Not listed in ECR 2023
6	Bridges and Culverts	Orange	IEE/ESA and ESMP based on agreed framework.	Listed in ECR 2023
7	Public Toilet	Orange	IEE/ESA and ESMP based on agreed framework.	Llisted in ECR 2023
9	Park/Public Place	Orange	IEE/ESA and ESMP based on agreed framework.	Listed in ECR 2023

Sources: The Environment Conservation Rules, 2023

Since the subprojects are being considered for World Bank funding, the GOB may conduct an environmental and social assessment following the procedures of "The World Bank Environmental and Social Framework 2017". Based on WB ESF, the project risk may be 4 types; such as - High Risk, Substantial Risk, Moderate Risk

[1] IEE = Initial Environmental Examination
[2] ESA = Environmental Social Assessment
[3] ESMP= Environmental Social Management Plan
[4] ECR 2023 = The Environment Conservation Rules, 2023

or Low Risk, These risks categorizes bythe type, location, sensitivity, and scale of the project; the nature and magnitude of the potential environmental and social risks and impacts; and the capacity and commitment of the Borrower (including any other entity responsible for the implementation of the project)". But, based on the assessment and WB ESF-2017, the RUTDP is considered as ***substantial risk project***.

The subprojects' potential environmental impacts and proposed mitigation measures from pre-construction to operation phase are given in the following table.

Table K 3: Climate Sensitivity and Hazard Screening

Sl. No.	Subproject	Cyclone and Storm Surges		Flood &Flash Flood		Water Logging		Earthquake	
		Impact	Measures	Impact	Measures	Impact	Measures	Impact	Measures
1	Kitchen Market & Supermarket	Severe cyclone, storm surges and tidal floodingmay damages the infrastructures due to high wind speed and water pressure	- Early Warning system - Design structures against wind speed according to Bangladesh National Building Code (BNBC) and - Designing the cyclone and storm surge adaptive resilient infrastructures	Inundation, flood and flash flood velocity and water current during severe flooding may damage the structures	- Early Warning system and - Designing the flood and flash flood adaptive resilient infrastructures	Long term water logging may damage infrastructure and cause economic losses	- Ensure that the drainage system has appropriate outfalls to quick discharge of storm water	Damage the structures and causes accidents/ loss of human lives.	- Design against Seismic coefficient as per BNBC 2020
2	Roads + Drains + Footpaths + Streetlights	Severe cyclone, storm surges and tidal flooding may damage the roads and other urban infrastructures	- Design structures against cyclonic waveand storm surges & tidal flooding - Increase the height of the roads, drains, and embankments - Regular maintainance	Flood and flash floodat monsoon and post monsoon may damage the structures	- Considering the flood and flash flood effects and high velocity of water, climatic pattern etc.;designing the structures (avoid structures that are transverse to water flow, and provide appropriate drainage capacity)	May cause - - Losses road surface, - Drainage overflow and waste materials dumpeing into the drains may cause congestion	- Design must consider the quick discharge of storm water, and structures to withstand high velocity of water.	Damage structures, interrupt the communicationa nd cause accidents/ loss of human lives.	- Design against Seismic coefficient
3	Bridges and	Severe cyclone,	- Design structures	Flood and	- Considering the	None	None	Damage	- Design against

Sl. No.	Subproject	Cyclone and Storm Surges		Flood &Flash Flood		Water Logging		Earthquake	
		Impact	Measures	Impact	Measures	Impact	Measures	Impact	Measures
	Culverts	storm surges and tidal flooding may damage the bridges & culverts	against cyclonic wave and storm surges & tidal flooding - Increase the height of the bridges, culverts and embankments - Regular maintainance	flash flood may damage the bridges, culverts & other structures	flood and flash flood effects and high velocity of water, climatic pattern etc.; designing the structures (avoid structures that are transverse to water flow)			structures, interrupt the communication and cause accidents/ loss of human lives.	Seismic coefficient, follow BNBC 2020.
4	Bus Terminal	Severe cyclone, storm surges and tidal flooding may damage the infrastructures	- Early Warning system - Design structures against wind speed according to Bangladesh National Building Code (BNBC) and - Designing the cyclone and storm surge adaptive resilient infrastructures	Flood and flash flood may damage the structures	- Considering the flood and flash flood effects and high velocity of water, climatic pattern etc.; designing the structures - Plinth raising of infrastructures - Keep land level to above maximum recorded flood level	Long term water logging may damage the infrastructure	- Design must consider the quick discharge of storm water - Plinth raising of infrastructures	Damage structures, disturbing the nearby environment	- Design against Seismic coefficient as per BNBC, 2020

Sl. No.	Subproject	Cyclone and Storm Surges		Flood &Flash Flood		Water Logging		Earthquake	
		Impact	Measures	Impact	Measures	Impact	Measures	Impact	Measures
5	Park	Severe cyclone, storm surges and tidal flooding may damage the infrastructures	- Design structures against cyclonic wave and storm surges & tidal flooding - Plinth raising the infrastructures - Regularmaintainance	Flood and flash flood may damage the structures	- Considering the flood and flash flood effects and high velocity of water, climatic pattern etc.; designing the structures - Keep land level to above maximum recorded flood level	Long term water logging may damage the infrastructure and reduce the number of visitors and the park's revenue.	- Design must consider the quick discharge of storm water - Keep land level above maximum recorded flood level	Damage structures	- Design against Seismic coefficient as per BNBC, 2020

Source: Feasibility Study Report, 2022.

K.2. Disaster Resilience

The disaster resilience of the subprojects shall be further addressed through the following:

Table K4:Plan for Disaster Resilience

Indicator	Kitchen Market and Supermarket	Road + Drain + Footpath + Streetlight, and Bridges and Culverts	Bridge and culvert
Contingency Plan for Emergency Disaster Management	•Ensure that appropriate emergency exits are included in the design; •Install appropriate numbers of fire extinguishers and locate them according to government guidelines; •Install automatic fire suppression systems if required by government regulations; and •Install visible warning signs regarding the location of emergency exits and access routes, and nearest safe evacuation sites; •Conduct regular fire and earthquake drills.	Install visible warning signs regarding the location of hazard prone areas, emergency access routes, and nearest safe evacuation sites.	• Install visible warning signs regarding the location of hazard prone areas, emergency access routes, and nearest safe evacuation sites; and
Business Continuity	•Install emergency power generators and rainwater storage tanks.	• Pourashava to designate a traffic monitoring and management system.	• Undertaken pre cautionary measures for vehicle movement of vulnerable structure
Time of Recovery	•The Engineering Department of the Pourashava shall coordinate with the concerned Authorities on the repair and rehabilitation of affected infrastructures.		
Reporting of Residual Risks	•The Engineering Department of the Pourashava shall identify potential residual risks and establish a reporting system with the concerned Authority. This shall be done as part of the Environmental Management and Monitoring Plan that is discussed in the following section.		

Source: Feasibility Study Report, 2022.

K 2.1 Contingency Plan for Emergency Disaster Management

The Project shall support each participating ULB in preparing and implementing respective contingency plans for emergency disaster management. Such contingency plans may include:

1. For vertical subprojects such as kitchen markets, supermarkets, water treatment plants, community centers, etc.:

    - Ensure that appropriate emergency exits are included in the design;
    - Install appropriate numbers of fire extinguishers and locate them according to government guidelines;
    - Install automatic fire suppression systems if required by government regulations;
    - Install visible warning signs regarding the location of emergency exits and access routes, and nearest safe evacuation sites; and
    - Conduct regular fire and earthquake drills.
2. For roads + drains + footpaths + streetlights, bridges and culverts, and foot over bridges:

    - Install visible warning signs regarding the location of hazard prone areas, emergency access routes, and nearest safe evacuation sites.

3. For public toilets and municipal parks

    - Install visible warning signs regarding the location of hazard prone areas, emergency access routes, and nearest safe evacuation sites; and
    - Install appropriate fire suppression equipment.

K2.2 Business Continuity Plan

The Project shall also support the participating ULBs in preparing and implementing relevant business continuity plans for the subprojects. These may include (i) installation of emergency power generators, (ii) establishment of traffic monitoring and management system, and (iii) installation of rainwater storage tanks.

K.2.3 Time of Recovery

Should an infrastructure be damaged after a disaster, it is recommended that the concerned Engineering Department of each ULB coordinate with the concerned Authorities on the repair and rehabilitation of affected infrastructures.

L2.4 Reporting of Residual Risks

The Engineering Departments of each ULB shall identify potential residual risks (such as prolonged water logging or appearance of hairline cracks on structures) and establish a reporting system with the concerned Authority. This shall be done as part of the subprojects' Environmental Management and Monitoring Plan.

ANNEX M

GRIEVANCE RESPONSE MECHANISM (GRM)

I. Background and Purpose

Infrastructure development and rehabilitation causes displacement of people from private and public lands, and change in land use and construction activities induce environmental concerns. Urban infrastructure development and improvement have a more complicated situation due to the density of settlement and rapid growth in urbanization and rural urban migration on livelihood searches. It is very likely that communities will have questions and complaints and in some cases suggestions on alternative options for infrastructure routes and locations. The likely affected persons due to acquisition of additional lands and vacating existing ULB lands for project purpose may have issues of recognition of losses and the compensation process applied for them. The current legislative framework has limitations in addressing such claims and complaints and there is no mechanism to hear and redress grievances of non-titled persons affected by land acquisition or displacement for project purpose. Considering the context, the project will establish a grievance response mechanism (GRM) to answer to queries, receive suggestions and address complaints and grievances about any irregularities in application of the guidelines adopted in this framework for inclusive project design, and assessment and mitigation of social and environmental impacts. Based on consensus, the procedure will help to resolve issues/conflicts amicably and quickly, saving the aggrieved persons from having to resort to expensive, time-consuming legal action. The procedure will however not pre-empt a person's right to go to the courts of law.

II. Grievance Focal Points

Grievance response focal points will be available at the ULBs and at project level within LGED. The WC at the ward level will be the first focal point on project GRM and the Grievance Redress Committee (GRC) at the ULB level will be authorized to deal with all suggestions and complaints at the subproject level. ULBs will ensure that communities are fully informed about the GRM and their rights to offer suggestions and make complaints, and the different mechanisms through which they can do so, including grievances related to the land acquisition process and physical displacement. The Secretariat for each GRC will be at the Mayoral office and each of the WC may sit on any grievance and suggestions from the communities at the ward level locally or in the office of the ward councilor. GRM focal points and the case record management are shown in flow diagram at Figure 3.

The membership of the GRCs will ensure proper presentation of complaints and grievances as well as impartial hearings and investigations, and transparent resolutions. Where tribal peoples are among the beneficiaries or affected persons, the membership composition of the GRCs will consider any traditional conflict resolution arrangements that tribal communities may practice. The GRC Chairman will call the concerned Ward Councilor from which the complaint was received for hearing. If the aggrieved person is a female, ULBs will ask the concerned female Ward Councilor to participate in the hearings.

To ensure that grievance redress decisions are made in formal hearings and in a transparent manner, the GRC Chairman will apply the following guidelines:

- Reject a grievance redress application with any recommendations written on it by a GRC member or others such as politicians and other influential persons.
- Remove a recommendation by any person that may separately accompany the grievance redress application.
- Disqualify a GRC member who has made a recommendation on the application or separately before the formal hearing:
- Where a GRC member is removed, appoint another person in consultation with the Project Director.
- The GRC Chairmen will also ensure strict adherence to the guidelines of social management and impact mitigation policies adopted in this framework and the mitigation standards, such as compensation rates established through market price surveys.

III. GRM Policy Guidelines

The GRM focal points at the ULB level will be established before approval of the subprojects at the LGED level for financing. GRC at the ULB level will meet at least once before commencement of a project and have an orientation on their mandate, functions and working procedures. Within the context of the RUTDP, for the proposed GRM to work effectively, the following issues will be considered.

1. Sensitization and Dissemination of GRM: The ULBs will disclose project related information including subproject interventions with location, provision of GRM with scope and procedures, and rights of the communities of accessing the GRM with limitations through subproject launching meeting. As part of the subproject launching program, a session with WCs, TLCC, GRC, ULB officer bearers and administrative and engineering staff is to be organized on the GRM provision including functions of GRC, TLCC, WCs, and rights and responsibility of the communities. Exact addresses for lodging complaining and providing suggestions to the project team will be disclosed in the meeting and subsequently in leaflets distributed among the beneficiaries.

2. Social Inclusion and Safeguards: ULBs must ensure effective implementation of OP4.01, 4.04, 4.11 and 4.12. LGED and BMDF will appoint designated Social Management Specialists and project level personnel helping the ULBs in social management including land acquisition and resettlement of project affected persons. Specifically, LGED will ensure that ULBs implement project ESMF in their full meaning and requirements.

3. Setting up GRM Data Bank: LGED will set up a central Data Bank on all complaints received and handled segregated by types of complaints. The data base should be accessible by all key project staff with the PMU at LGED. LGED will send quarterly GRM report to the World Bank. This report will provide detailed information on number and types of complaints received by districts followed by status of resolutions. The World Bank will have access to the GRM Data Bank, if required. The ULBs will be able to access their own data in the GRM Databank. The project Design, Supervision and Management Consultant will help the project to set up and maintain such databank. Setting up this databank will include developing and administering necessary computer software and networking with the project supported ULBs.

4. Independent M&E of GRM Implementation: An independent monitoring and evaluation (M&E) and associated sanction measures will ensure check and balance of the GRM of the project. The M&E report on GRM will be prepared against a set of indicators developed at the time of implementation and included in the RAP.

IV. Scope of GRM

Suggestions and complaints to be addressed through GRM include, not limited to the following:

- Location/alignment of subproject interventions
- Access to improved infrastructure
- Use of additional private lands
- Temporary and permanent displacement of people
- Compensation and assistance issues against displacement of people

- Environmental concerns and construction safety
- Gender and vulnerability-based discriminations
- Quality of works

All other complaints will be first dealt at the WC level. If a specific complaint cannot be resolved by the WCs, they will be referred to the GRCs.

There will be two primary channels for an aggrieved person for lodging a complaint or sending a suggestion related to a subproject.

a) *Electronic submission:* The project will develop i) an interactive complaint mechanism in the ULB, LGED websites and ii) a valid email address of the ULBs to follow up complaints lodged. In the website, there will be draw-down buttons with pop-up windows to launch a complaint. A complainant will receive a unique Case Number for future tracking.

b) *Paper-based submission:* This mechanism will provide a Drop Box, accept Postal mail and walk in submission to GRC secretariat or to the President, WC at the ward level. Each complaint received will be assigned a unique Case Number so that the status of cases can be tracked.

LGED will operationalize the GRM channels at loan effect and the ULBs will establish GRM focal points, GRC and channels for accepting suggestions and complaints at least 30 days before bidding process.

V. Grievance Petition and Resolution Process

A GRM Information Leaflet will be developed in local Bangla language and distributed among the communities in the subproject beneficiary areas. LGED consultants will assist in preparation and printing of this leaflet for the participating ULBs. The steps for submission of complaints and suggestions and their resolution at GRCs will be the following:

***Step One*:** All complaints will first be received with the WC through the ward councilor. The WC will review and sort the cases in terms of nature of grievance and urgency of resolution. If the complaints are about any misconception or wrong understanding on policy and measures, the WC will clarify and if the aggrieved person is satisfied, will close the case at the entry level keeping a case record. The complaints and suggestions designated after scrutiny will be forwarded to the GRC at ULBs.

Step Two: The aggrieved persons may also lodge the complaints and send suggestions directly through postal mail, e-mail, websites or drop the written complaint in the ULB drop box. The ULBs will disclose the addresses of these portals to the communities before submission of their subprojects to LGED for approval and financing.

Step Three: The complaints and suggestions received through various designated channels will be documented through paper-based registers and in computerized Data Bank with unique Case Numbers. The Member Secretary of the GRC will scrutinize the merits and produce the cases to the GRC's Monthly Sessions. Attendants, minutes of the meeting and the decisions will be instantly noted in the resolution book and entered into the GRM Databank with a resolution ID number. All complaints will be resolved in a maximum of 4 weeks after receiving the cases.

Step Four: If the resolution attempt at the local level fails, the GRC will refer the complaint with the minutes of the hearings to the PMU, LGED and the Project Director, BMDF, as the case may be, for further review. With active assistance from the Social Management Specialist, the Project Directors will decide and communicate it to the concerned GRC. The decisions on unresolved cases at this stage will be communicated to the GRC within one week of the complaint receipt. If a decision at this level is again found unacceptable by the aggrieved person(s), the LGED will advise the concerned ULB to drop the subproject or the concerned component from the investment.

A decision, agreed by the complainant at any stage of the GRM process, will be binding upon the ULBs concerned.

VI. GRM Documentation

To ensure impartiality and transparency, hearings on complaints at the GRC level will remain open to the public. The GRCs will record the details of the complaints and their resolution in a register, including intake details, resolution process and the closing procedures. LGED will maintain the following three GRM Books:

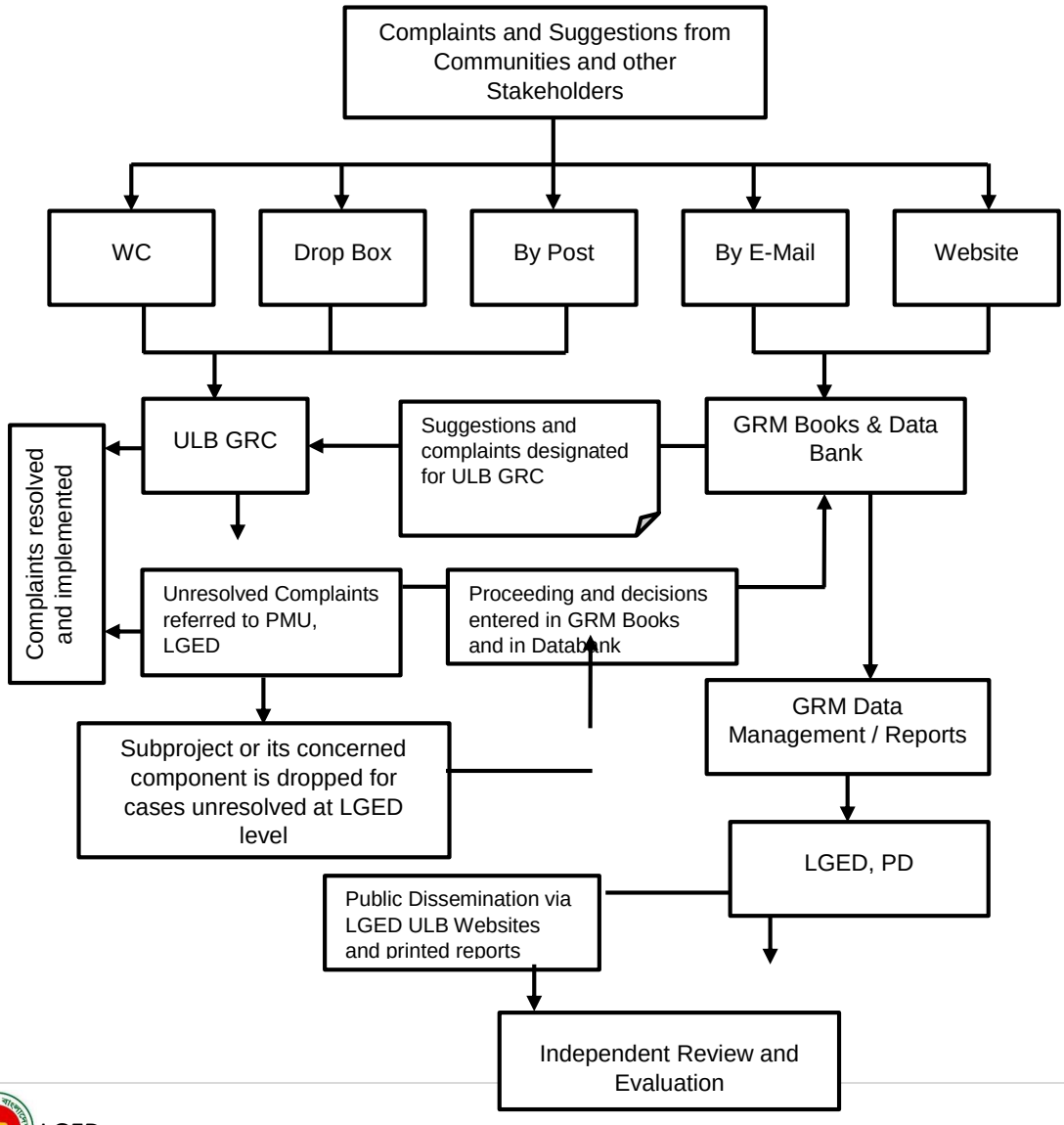
Registration Book: (1) Serial no., (2) Date of receipt, (3) Name of complainant, (4) Gender, (5) Father or husband, (6) Complete address, (7) Main objection (loss of land/property or entitlements), (8) Complainants' story and expectation with evidence, and (8) Previous records of similar grievances.

Resolution Book: (1) Serial no., (2) Case no.,(3) Name of complainant, (4) Complainant's story and expectation, (5) Date of hearing, (6) Date of field investigation (if any), (7) Results of hearing and field investigation, (8) Decision of GRC, (9) Progress (pending, solved), and (10) Agreements or commitments.

Closing Book: (1) Serial no., (2) Case no., (3) Name of complainant, (4) Decisions and response to complainants, (5) Mode and medium of communication, (6) Date of closing, (7) Confirmation of complainants' satisfaction, and (8) Management actions to avoid recurrence.

Grievance resolution will be a continuous process during subproject implementation. The ULBs will keep records of all resolved and unresolved complaints and grievances (one file for each case record) and make them available for review as and when asked for by IDA and any other interested persons/entities. The ULBs will also prepare periodic reports on the grievance resolution process and publish these on their websites. LGED will consolidate reports from the ULBs on GRM and post in their websites.

Figure: GRM Institution and Focal Points



Annex N

OHS framework

OHS LAWS AND REGULATORY FRAMEWORKS

The Constitution of Bangladesh, as the highest law of the country has enunciated

(i) Socialism and freedom from exploitation (Article 10),
(ii) Emancipation of peasants and workers (Article 14),
(iii) Public health and morality (Article 18),
(iv) Equality of opportunity (Article 19) and
(v) work as a right and duty and a matter of honour (Article 20), as Fundamental principle of State policy. The State policy clearly mentions that everyone shall be paid for his work based on the principle "from each according to his abilities, to each according to his work"

Moreover, Freedom of Association (Article 38), Freedom of Profession or Occupation (Article 40) and Prohibition of Forced Labour (Article 34) are guaranteed under the constitution8

Bangladesh Labour (Amendment) Act (Act No. 30 of 2013**)**

The Labour (Amendment) Act 2013 makes a large number of amendments to the Labour Act 2006 and, particularly, introduces several provisions aimed at improving workplace safety.

Among others, the amended legislation now requires the creation of safety committees in factories with 50 workers or more, the establishment of workplace Health Centres in workplaces with over 5000 employees and safety welfare officers in workplaces with more than 500. Under the amendments compensation for work-related deaths is provided after two years in employment, compared to the current three years period. Workplaces of over 500 employers are required to arrange for and cover the cost of treatment of occupational diseases. The labour inspectorate is given new responsibilities to inspect safety and health conditions of workplaces and conduct on-the-spot inspections.

Other important amendments deal with dangerous work for children; emergency exits; access to gangways and stairs for workers; mandatory use of personal safety equipment; notification of competent authority in case of incident; and provisions on social dialogue, trade unions and dispute resolution; and employers and companies responsibilities

Health and safety law and policies

OHS Policy-2013

In the context of global, ethical and legal obligations to ensure a safe and healthy working environment for all, the National Policy on Occupational Health and Safety was formulated and adopted on 5th November 2013, with the understanding that the implementation of such a National Policy would firstly ensure the safety of workers and secondly, help increase industrial productivity. The Policy applies to all workplaces in Bangladesh, including formal and informal sectors of industries, factories, enterprises, business and commercial entities and farms.

The ultimate goal of the Policy is the nationwide understanding and acceptance of OHS for all women and men who are working in both the formal and informal sectors in Bangladesh. A robust national OHS framework will significantly help reduce the number of deaths, injuries and occupation-related diseases, thereby fulfilling the constitutional and legal obligations ofthe state.

Bangladesh Labour Act-2006

The Bangladesh Labour Act (2006) is the key labour legislation that sets Occupational Safety and Health standards, and compensation for injury and accidents in the workplace. In 2013, significant amendments were made to the BLA (2006), regarding occupational safety and health, primarily in response to the Rana Plaza collapse. The Bangladesh Labour Rules (2015) set implementation procedures to corresponding sections of BLA (2006).

Other Policies and Laws

A number of laws have several OHS-related provisions, including the Fire Prevention and Extinguishing Act (2003), the Bangladesh National Building Code (2006), the Labour Welfare Foundation Act (2006) and the Ship Breaking and Ship Recycling Rules (2011).

The National Labor Policy 2013 9 urges the government to bring necessary amendments in the laws to ensure safe, healthy and women-friendly workplaces and maternity protection (Art. 19). One of the main objectives of the Industrial Policy is to ensure the implementation of international standards on environment, health, safety and standard working environment within the industrialization process (Art. 2.15).

A number of other labour policies, including the National Child Labour Elimination Policy, (2010) and the Domestic Workers Welfare Policy (2015), also provide guidelines on OHS for respective sectors.

Summary of OHS Provisions

OHS related policies and laws can be summarized under the following categories:

Occupational Accidents, Hazards and Diseases

The key provision on occupational accidents, hazards and diseases relates to accident prevention
Regulations: prevention from workplace hazards; disease prevention and safeguards; record keeping and planning; rehabilitation and building awareness of OHS.

Workplace safety

Risk identification and awareness: Employer's must identify all OHS risks and orientate all workers on such risks and the potential causes of accidents (Clause 4.d.2). The policy also Imminent danger: The BLA clearly states that if a Labour Inspector finds a building, or any part of a building, or its machinery and plant, poses a serious threat to workers, then s/he is duty-bound to issue a written notice to the establishment owner. The owner must then seek necessary remediation for the building, and act on the notice according to the given deadline (Section 61).

Fire license: According to the Fire Prevention and Extinction Act (2003), in order to use a building or certain part of a building or establishment as a warehouse or workshop, certain person/ group need a permission license under the Act from the Director General of the Fire Service.

Fire resistance requirements: The Fire Code in Bangladesh National Building Code (2006) be fully enclosed with the construction of a minimum four-hour fire-resistance protection, and that all fire exits comply with existing National Acts (Section 2.11.5). Handling of petroleum products and asbestos: The Bangladesh Ship Breaking and Recycling Rules (2011) suggests maintaining a safety distance for storage of all petroleum products (Section 17.7). There should also be a specially constructed facility for the removal and handling other available asbestos handling systems (Section 17.9). Safety Committee: The BLA (2006), Section 90a, necessitates the constitution of a Safety shall be constituted as prescribed in Section 30 of the Act.

Accident prevention

The National OHS Policy, the National Labor Policy and the National Industrial Policy deal with the issues of workplace accident prevention.

The National OHS Policy clearly stipulates the need to:

- Ensure workplace safety and health protection in light of international conventions/ Declarations/recommendations/documents (Art. 3.a.1);

- Implement national laws and regulations in relation with workplace safety and occupational health (Art. 3.a.2);
- Set up national standards on OHS (Art. 3. a15, Art. 4a. 20);
- Develop a strategy and action plan to ensure proper implementation of national laws and regulations (Art.4. a.3);
- Include OHS issues in the policies and programs of all related ministries and agencies (Art.4.a13);
- Establish labor courts in the industrial zone for implementing mandatory OHS Provisions (Art. 4. A.15);
- Impose Mandatory terms and conditions upon construction agencies to follow OHS policies during government run construction works (Art. 4. A.22);
- Provide financial support to the establishments that maintain and practice the OHS rules and regulations (Art. 4.a.24);
- Ensure maximum safety standards during factory construction and implement all standards and regulations on internal safety environment (Art. 4.d.1);
- Firefighting requirements: The Bangladesh Labor Act 2006 states that every establishment shall be provided with firefighting apparatus and fire exit. In case of 50 or more workers, employer shall arrange at least once in every six months a fire-fighting drills and shall maintain a recordbook (Section 62, BLA).

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Machineries safety: If there are machines which are in motion or in use, they should be securely fenced by the safeguards of substantial construction (Section 63, BLA). Every set of screw,

Floor safety: All floors, stairs, passages and gangways of establishments should be of sound construction and properly maintained, and all floors and stairways and strong railing shall be provided to ensure safety. The passages and stairs shall be kept opened for easy movement during continuance of work (Section 72 BLA (Amendment) 2013).

Load handling: heavy as to be likely to cause injury (Sections 74, 83-86, 90,323, BLA.). Personal safety equipment: No authority shall engage any worker in work without providing him/her with personal safety equipment and ensuring correct uses thereof. A record book shall be maintained on this matter by the

The Labour Code: Part II

The *Code*, Part II, is legislation designed to protect you, a federal public service employee, from workplace injuries and illnesses. It establishes the duties for your employer, OHS committees and representatives within your organization, the powers of the Minister of Labour and their representatives; and your duties and rights as an employee.

Employer: a person who employs one or more employees and includes an employers' organization and any person who acts on behalf of an employer (this definition includes anyone who directs the work of another person and can be a manager, supervisor, a lead hand or lead scientist in field operations).

Safety: protection from danger and hazards arising out of, linked with or occurring in the course of employment.

Workplace: any place where an employee is engaged in work for the employee's employer (a workplace is not limited to an office environment or on board a vessel; it is any place where the employee conducts work on behalf of the department).

Important sections of the *Code*, Part II

A specific list of duties, powers and rights are outlined in the following sections:

- Employers: sections 124 and 125;
- Employees: section 126;
- Representatives of the Minister of Labour: sections 127 and 129;
- Policy Health and Safety Committees: section 134;
- Workplace Health and Safety Committees: section 135;
- Health and Safety Representatives: section 136.

Your specific duties as an employee and your employer's duties are outlined in a later section of this training.

Processes are outlined in the *Code*, Part II, for the reporting of hazards via:

- An Internal Complaint Resolution Process: section 127.1;
- A Refusal to Work Process: section 128;
- A complaint process for employees when action has been taken against them as a result of a refusal to work: section 133;
- An appeal process for directions issued by the Labour Program's health and safety officer, who is the representative of the Minister of Labour; the appeal is made to the Bangladesh Industrial Relations Board: section 146.

When and how to navigate through these processes will be addressed in a later section of this training.

Special provisions are outlined in the *Code*, Part II, to ensure that:

- If you are pregnant or nursing, your health and that of your fetus or child are protected should your regular job function pose a risk (section 132).
- You are not prevented from providing information to an appeals officer or the Minister of Labour upon request (section 143).

Work Place Harassment and Violence Prevention Regulations

The Government of Bangladesh made a commitment to ensure all Canadian workers, including the most vulnerable, are protected from harassment and violence in federally regulated workplaces. To this end, on January 1st, 2021, the Government took an important step toward strengthened provisions in the Bangladesh Labour Code to better protect workers and support employers. The Regulations replace Part XX of the Bangladesh Occupational Health and Safety Regulations, portions of the Bangladesh Labour Standards Regulations, as well as occupational health and safety regulations related to aviation, maritime, oil and gas, and on board trains. They highlight the importance of harassment and violence prevention and make it easier for employers and employees to identify their rights and duties.

SOCIAL SECURITY AND INSURANCE

The BLA (2006) and Bangladesh Labour Rules (2015) provide mandatory provisions for group insurance for workplaces with 100 or more permanent workers. It also prescribes accident injury insurance for workplaces with more than 10 workers.

SOCIAL SECURITY

Social security as a concept is very wide and it is indispensable in any developing economy more essentially when it is a welfare state. By the very fact that it strikes at the root of poverty, unemployment etc., its scope and application is widened.

According to Sir William Beveridge:- "The security of income to take the place of earnings when they are interrupted by unemployment sickness accident to provide for retirement through are to provide against loss of support by the death of another person and to meet exceptional expenditure those connected with birth, death and marriage. Primarily social security means income should be associated with treatment design to bring the interruption of earnings to an end as soon as possible".

ILO has defined social security as:- "The security that society furnishes appropriate organization against certain risks to which its members are exposed. These risks are essentially contingencies against which the individual of small means cannot effectively provide by his own ability or foresight alone or even in private combination with fellows".

Safety Management Practices

The primary responsibility for a safe workplace lays on the arm of the employer themselves, in the context of this study refer to the entrepreneurs. Entrepreneurs' commitment to demonstrate adequate support and resources to safety activities will ensure all employees in the organization are clear about their health and safety responsibilities. As the employees are the greatest assets for the organization, it is good for the entrepreneurs to establish an effective plan for safety management practice to protect their employees. Vinodkumar & Bhasi (2009) revealed that the entrepreneur's commitment positively affected safety behaviors and the safety performance, the employee satisfaction and competitiveness. Organizations with low accident rates value these safety management practice more than those with high accident rates. The researcher also reported that employees, who experienced an occupational accident before, take fewer safety precautions, showed low commitment to the management, did not comply with the occupational safety precautions and exhibited low participation in occupational safety issues (Vinodkumar & Bhasi, 2009). McGonagle et al. (2016) reported that the entrepreneur's commitment is positively associated with occupational safety motivation of employees, safety participation and compliance with safety rules, but negatively associated with minor injuries.

Insurance and health and safety

Insurers play a major role in helping organizations to protect against and manage health and safety risks by providing advice and guidance on assessing and managing risk, and incentivizing good behavior. Insurers complement the regulatory system, but are not themselves regulators -– they deal with civil, not criminal, liability.

Insurers have identified five key measures organisations can adopt to manage their health and safety risks effectively. These measures build on the HSE's regulations on the management of health and safety at work.

IA/LGED should adopt the principles of the HSE and the Institute of Directors' joint guidance on leading health and safety at work, which encourage senior management's leadership of, and worker involvement in, health and safety practices.

EDUCATION, TRAINING AND RESEARCH ON OHS

Safety Training

Safety training is considered the most important safety management practice, which can predict safety knowledge, safety motivation, safety compliance and safety participation. These findings provide valuable guidance for researchers and practitioners to identify mechanisms that can be used to improve workplace safety. In every successful organization, any successful accident prevention plan, and any occupational safety and health plan, the key element is effective safety training. It improves behavioural skills, relevant knowledge and attitudes (Vinodkumar & Bhasi, 2010). Safety training is an important risk prevention and control strategy to ensure that every employee is safe in a good working environment (Cohen et al., 1998). Safety training also provides ways to make accidents more predictable. In order to improve the safety and health of all employees, the organization should develop a systematic, comprehensive safety and health training program for new employees (Fredenburg, 2013). Tinmannsvik & Hovden (2003) found that companies with low accident rates have the characteristics of good safety training for their employees. Therefore, safety training is considered to be a management practice to curb safety issues and enhance safety performance. Worker's Involvement in Safety Employee involvement in the safety management process involves upward communication process and decision-making process between individuals or groups within the organization (Vredenburgh, 2002), because employees are used to recommendations on safety improvements, especially in the adoption of new technologies and the material was introduced (Butler & Park, 2005). Hayes et al., (1998) and Lee & Dalal (2016) explore the security climate and culture. It is essential for predicting the safety performance of workers in the organization. In addition, in their model, Griffin & Neal (2000) believed that security knowledge and safety motivation is a near-end factor that has a positive relationship with workers safe behaviour. The involvement of employees also was security management, because it can help organizations achieve the following goals which are implementation and organizational improvement of occupational safety and health safety conditions for the benefit of both employees and organizations (Podgórski, 2005). Safety Communication To ensure employee's work safety practise, there must be a good quality communication in disseminating related safety information (Parker, Axtell & Turner, 2001). Previous research exists in support of the relationship of safety communication with various indicators of safety performance. For example, Fernandez-Muñiz et al. (2012) found that the management commitment on safety practice had positive impact on encouragement and communication. Research done by Hale, Heijer & Koornneef (2003) identified safety communication between managers and employees as one of five desirable management safety practices, which differentiated between low and high accident rate postal delivery offices. There must be two ways communication between employees and management. Employees is to encourage to give their feedback, comments for the improvements safety related Thus, with an efficient communication and feedback system, management can track hazards to prevent accidents and injuries (Vredenburgh, 2002).

Social Insurance and Social Assistance

Social security is a very comprehensive term. The two important means of providing social security are social insurance and social assistance. Thus, it may be called to be the two faces of the same coin. Both of these are part of a social security system.

Social insurance

Social Insurance is one of the devices to prevent individual from falling to the death of poverty, misery and to help him in times of emergencies. Insurance involves the setting aside of some money in order to provide compensation against loss resulting from a particular emergency. Thus, social insurance is a co-operative device which aims at granting adequate benefits to the insured on the compulsory basis in time of unemployment, sickness and other emergencies. Sir William Beveridge has defined social insurance as giving in returns for contribution benefits up to substance level as of right and without means test so that individual may build freely upon it. Thus social insurance implies both that it is compulsory and that men stand together with their fellows.

This is based on the principles of compulsory mutual aid. The principal elements of social insurance are:

i) Social insurance is financed by contributions which are normally shared between employers and workers, with perhaps, state participation in the form of a supplementary contribution or other subsidy from the general revenue.
ii) Participation is compulsory with few exceptions.
iii) Contributions are accumulated in special funds out of which benefits are paid.
iv) Surplus funds not needed to pay, current benefits are invested to earn further income.
v) A person's right to benefit is secured by his contribution record without any test of need or means.
vi) The contribution and benefit rates are often related to what the person is or has been earning.

Social assistance

Social assistance refers to the assistance rendered by the society to the poor and needy persons voluntarily without placing any obligation on them to make any contribution to be entitled to relief such as workmen's compensation, maternity benefit and old age pension etc. Thus, one may say that a social assistance scheme provides benefits for persons of small means granted as of right in amount sufficient to meet a minimum standard of need and financed from taxation.

Social assistance represents the unilateral obligations of the community towards its dependent group. It is provided by the society or the government to the poor and needy individual. The principal feature of social assistance are (1) the whole cost of the Programme is met by the State and local units of Government (2) benefits are paid as of legal right in prescribed categories of need (3) in assessing need, a person's other income and resources are taken into account certain resources such as a reasonable level of personal savings are disregarded and (4) the benefit grant is designed to bring a person's total income upto a community determined maximum taking into account other factors such as family size and unavoidable fixed obligations such as rent grants are not related to applicant's previous earnings or customary standard of living. The difference between social insurance and social assistance are as follows:

a) Social assistance is purely a government affair while social insurance is partly financed by the State.
b) Social assistance is given gratis while social insurance is granted to those persons who pay a contribution.
c) Besides, a social insurance does not insist upon a means test upon a means test and benefits are granted without it while social assistance is granted only if certain conditions prescribed by the Government are fulfilled.

Importance of Safety and its applications

Safety in a work environment is important because it helps to protect employees and can keep the costs that an employer has to a minimum. It is important to keep employees safe and to send implementing the framework- a key role for OHS Framework.

The success of the framework depends on its implementation at country, national, sectoral and enterprise levels, with effective enforcement, social dialogue, funding, awareness-raising and data collection being key. Through its extensive network of partners, RUTDP is well placed to facilitate action, cooperation and exchange, and deliver on the ambitions of the framework.

RUTDP's foresight studies and overview projects aim to anticipate risks and identify priorities, to inform the development of OHS practice and policy in areas such as digitalization and green jobs, and stress and psychosocial risks. RUTDP also provides easy-to-use resources to help workplaces put prevention into practice, with a wealth of guidance being produced to help keep workers safe during the pandemic, whether exposed on the frontline or adapting to working from home

PROMOTIONAL ACTIVITIES

Undesirable physical and psychosocial job features are distributed differentially by gender, socioeconomic status, race/ethnicity, and national origin in many societies. These factors are thus part of the context of any attempt to improve the health of people in a low socioeconomic position, who are also more likely to experience poor diet, inadequate exercise, tobacco smoke and other environmental hazards, and lack of access to primary care and medical screening.60, 61 Additive or even synergistic effects may result from hazardous workplace exposures, whether physical or organizational.

Traditionally, HP practice has focused on individual change in health behaviors such as exercise, diet, tobacco smoking, and stress management and coping skills, with these lifestyle risk factors being well-established contributors to chronic conditions such as obesity, hypertension, CVD, and diabetes. They have also been associated with MSD risk, albeit inconsistently.

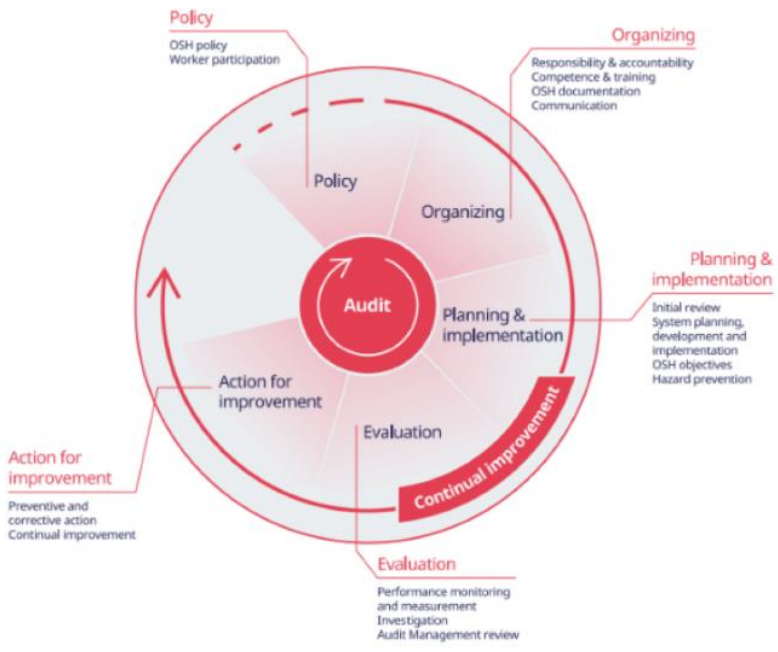
However, HP is a broader public health activity than the prevention of specific diseases at the individual level. More recent evolutions have addressed environmental influences on health behaviors in the community and in the work setting. Social HP involves activities conducted at the community or societal level, complementing the individual focus. The World Health Organization's Ottawa Charter for Health Promotion highlighted the impact of working and living conditions on socioeconomic health disparities:

Health promotion action aims at reducing differences in current health status and ensuring equal opportunities and resources. People cannot achieve their fullest health potential unless they are able to take control of those things which determine their health.

Health behaviors represent decisions based on intrinsic factors (knowledge, beliefs, and motivation) and also in relation to factors in the physical and psychosocial environment. An emerging literature indicates the effect of working conditions on individual health behaviors such as smoking, diet, and exercise (Figure). For example, low decision latitude, low rewards relative to effort, and other psychosocial stressors at work have been associated with leisure time inactivity, obesity, and tobacco and alcohol consumption. In turn, such combinations of risk factors may challenge health even further; examples are the interaction of cigarette smoking with physically heavy jobs on the risk of vertebral pathology, and that of body mass index with physical workload on the risk of chronic shoulder disorders. Thus, to be effective, WHP programs should address organizational conditions in addition to individual behaviors. Healthy workplaces should involve employees in decisions about work processes, promote learning, reward appropriately, and attend to interpersonal relationshi

OHS Management System

In order to create and maintain a safe and healthy working environment and comply with the OHS requirements pursuant to national laws and regulations, employers are encouraged to make appropriate arrangements for the establishment of an OHS management system. The system should contain the main elements of policy, organizing, planning and implementation, evaluation and action for improvement, as shown in the figure.



OHS Management Cycle

Guidelines on occupational safety and health management systems, ILO-OHS 2001

These guidelines provide a unique international model, compatible with other management system standards and guides. They reflect ILO's tripartite approach and the principles defined in its international OHS instruments, particularly the Occupational Safety and Health Convention, 1981 and Recommendation. Their purpose is to assist organizations (enterprises/workplaces) and competent institutions in the achievement of continual improvement in OHS performance.

How can occupational safety and health be managed?

Based on the continual improvement approach defined in the ILO OHS 2001 guidelines, this webpage provides practical information on what employers need to consider when managing OHS in their workplace.

It covers the main elements of the OHS management system (Policy; Organizing; Planning and implementation; Evaluation; Action for Improvement) as well as specific issues to be considered for the effective management of OHS (Controlling the risks; Accidents and Investigations; Multi-employer workspaces; Deciding who can help employers with their duties; Consulting workers; Providing training and information; Providing supervision; First aid; Safety signs). The page also includes videos showcasing examples of OHS management at the enterprise level, as well as a short case study going through the steps of the continual improvement OHS management cycle and links to external resources.

Occupational Safety and Health - A Guide for stakeholders

This online guide provides information on the management of OHS issues that are that are common across many sectors of industry. It details actions that employers and workers could follow to ensure safe and healthy systems of work in their workplaces. The guide also provides information on specific OHS hazards and risks. Parties who assisted with the development of this guide are identified in the introduction to the guide and acknowledgements.

Risk assessment and management process

To create safe and healthy working environment, occupational risks need to be eliminated or minimized, as far as reasonably practicable. To this end, sound risk assessment and management should be carried out to identify the hazards and evaluate the associated risks that could cause harm to workers so that appropriate OHS measures can be developed and implemented. Such process allows to evaluate whether enough preventive measures are already in place or if more actions need be taken and to prioritize them. The risk assessment and management process can be easily tailored to the size and activity of the enterprise.

The active participation of the workforce is essential to successfully carry out risk assessment and management. Even if it is not the responsibility of the workers to carry out a risk assessment (this is the responsibility of the employer), workers are often well aware of the hazards they face and tend to have ideas and suggestions on how best to control the risks arising from these hazards.

Training package on workplace risk assessment and management

This manual proposes a simple, straightforward and easy-to-use approach to risk assessment and management. It contains easy-to-use material, with worked examples of risk assessment and a ready-to-use risk assessment form/template that can be used in the workplace.

A 5-step guide for employers, workers and their representatives on conducting workplace risk assessments.

This guide provides a straightforward method to conduct risk assessment and management, easily applicable in most enterprises, in particular small and medium sized enterprises. The guide illustrates the 5 steps to assess and manage the risks in the workplace, and includes a risk assessment template that can be used for recording the findings in a simple and readily accessible format.

How to assess the risks in the workplace? Follow the five steps in this leaflet:

Step 1: Identify the hazards;
Step 2: Identify who might be harmed and how;
Step 3: Evaluate the risk – Identify and decide on the safety and health risk control measures;
Step 4: Record who is responsible for implementing which control measure, and the time-frame;
Step 5: Record the findings, monitor and review the risk assessment, and update when necessary.
A workplace risk assessment is one of the key tools for improving occupational safety and health conditions at work. Thus it plays an important role in protecting workers and businesses, as well as complying with the laws in many countries. It helps everyone focus on the risks that really matter in the workplace – the ones with the potential to cause real harm.

A well conducted workplace risk assessment will contribute to the protection of workers by eliminating or minimizing work related hazards and risks. It should also benefit businesses through better organization of working practices potentially increasing productivity.

The methodology described in this guide is not the only way to conduct risk assessments, there are other methods that work well, particularly for more complex risks and circumstances. However, we believe this method is the most straightforward for the majority of organizations, in particular small and medium sized enterprises.

Specific risks

- Harmful Chemical and Biological agents/substances
- Psychosocial risks and stress at work
- Organizational matters
- Workplaces
- Electrical safety
- Fire safety
- Machinery, plant and equipment
- Pressure equipment
- Vehicles in the workplace
- Manual handling
- Noise
- Vibration
- Slips and trips
- Working at height
- Working in confined spaces
- Personal Protective Equipment

Annex O

Environmental and Social Monitoring Checklist

Part A: General Subproject Information

Part B: Key Environmental and Social Impacts

The Subproject Results in any of the following Impacts?	Yes			No	NA
	Significant	Moderate	Minor		
Felling of the trees					
Clearing of the vegetation that increase the risk of increased soil degradation or erosion					
Disturbance of the terrestrial and or aquatic specifies					
Noise pollution					
Air pollution					
Adverse effects on the quantity or quality of the surface water					
Production or increase the production of the solid waste					
Drainage congestion					
Water logging that increases the risk of the water related diseases					
Traffic congestion					
Public safety					

Part C: Work Place Environment and Gender Equity

The Subproject Results in any of the following Impacts?	Yes	No	NA
Does the contractor pay to the workers regularly?			
Is there any discrepancy between the male and female workers regarding the wages or salary for the same works?			
Is the contractor complying with the GOB labor law concerning the hiring of the workers?			
Does the contractor engage women labors and does the project have suitable works for them?			
Does the contractor engage child labor (less than 18 years) and aged people (more than 65 years old)?			
Does the contractor force to the workers for the completion of the works?			
Do the workers involve with the political activities, crime, drugs addiction and other forms of unwanted activities?			
Are construction camps adequately equipped with water supply, sanitary toilets, washing facilities and facilities for waste collection and storage?			
Has separate sanitation facilities been provided for women at work camps and the construction site?			
Do the laborers load heavy items on their heads or shoulders?			
Has the contractor undertaken an awareness program for the sexually transmitted diseases especially for HIV-AIDS and other infectious diseases like TB?			
Are first aid kits readily available for the workers at the job site along with the instructions for use?			
Are supervisors or other site personnel trained in the basic first aid emergency response measures?			

The Subproject Results in any of the following Impacts?	Yes	No	NA
Has the contractor provided necessary safety equipment to the workers			
Has the contractor provided training for use necessary safety equipment to the workers?			

Part D: Potential Impacts, Mitigation Measures and Monitoring Indicator Mentioned in the ESMP

Activity/ Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Monitoring Method		Monitoring Frequency	Implementation Status (Yes/No /NA)	Remarks
			Visual Observation	Analytical Analysis			
Construction and operation of labor shed for workers	Generation of sewage and solid waste may cause degradation of the surrounding environment	• Construction of sanitary latrine considering 15 persons for one toilet at the labor shed and separate toilet for male and female; • Erection of "no litter" sign, provision of waste bins (introduce separate waste bins for organic and inorganic wastes); • Ensure wastes (solid wastes and other forms of wastes) disposal at the designated dumping site.					
	Health of workers	• Conduct formal and unofficial discussion to increase awareness about hygiene practices among the workers; • Ensure availability and access to first-aid equipment and medical supplies for the workers.					
	Possible development of labor camp into permanent settlement	• Contractor to remove labor camp at the completion of contract.					
	Outside labor force causing negative impact on health and social well-being of local people	• Ensure that contractor employ local work force to provide work opportunity to the local people and conduct formal and unofficial awareness program for the health and social well-being of the local people.					

Activity/ Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Monitoring Method		Monitoring Frequency	Implementation Status (Yes/No /NA)	Remarks
			Visual Observation	Analytical Analysis			
General construction works	Drainage congestion and flooding	• Ensure provision for adequate drainage of storm water if needed; • Ensure provision for pumping of congested water if needed; • Ensure adequate monitoring of drainage effects, especially if construction works are carried out during the wet season.					
	Air pollution	• Check regularly and ensure that all the subproject vehicles are in good operating condition; • Ensure contractor spray water on dry surfaces regularly to reduce dust generation; • Maintain adequate moisture content of the soil and sand to be used for transportation, bed preparation, compaction and backfilling; • Ensure contractor sprinkle and cover stockpiles of loose materials (e.g., fine aggregates); • Ensure contractor avoid use of equipment at site and far from the local residents, which produce significant amount of particulate matter.					
	Traffic congestion, effect on traffic and pedestrian safety	• Ensure schedule deliveries of materials/ equipment during off-peak hours; • Place traffic/ cautionary sign to avoid undue traffic congestion and accidents; • Inform the local people about the subproject activities.					

Activity/ Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Monitoring Method		Monitoring Frequency	Implementation Status (Yes/No /NA)	Remarks
			Visual Observation	Analytical Analysis			
	Noise pollution	• In front of the road side sensitive infrastructures such as educational institutes and religious centers, construction work should be performed after school/ college and or in holiday and considering the prayer time; • Check and maintenance the equipment properly; • Avoid using of construction equipment producing excessive noise at night; • Regulate use of horns and avoid undue use of hydraulic horns by the subproject vehicles.					
	Water and soil pollution	• Prevent discharge of fuel, lubricants, chemicals and wastes into adjacent water bodies like ponds, Khal, ditches, irrigational and seasonal springs.					
	Felling of trees, clearing of vegetation and ecological disturbances	• To compensate and ecological enhancement trees will be planted after @3m distance. The proposed planted trees preferably local fruits, flowers, medicinal and ornamental trees at road side area where space is available and or anywhere ULBs owned suitable places in the subproject area.					
	Accidents	• Conduct formal and informal discussion for creating awareness about the accidents; • Provide PPEs and ensure using of the personal protective equipment by the workers.					

Activity/ Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Monitoring Method		Monitoring Frequency	Implementation Status (Yes/No /NA)	Remarks
			Visual Observation	Analytical Analysis			
	Spills and leaks of oil, toxic chemicals	• Proper handling of lubricating oil and fuel so that it does not fall on the soil and water body; • Collection, proper treatment, and disposal of the spills.					
All construction works	Beneficial impact on employment generation	• Employ local people in the subproject activities as much as possible; • Give priority to poor people living within subproject area in subproject related works (e.g., excavation and other works, which do not require skilled manpower);					
	Possible complaints and suggestion from the local people and stakeholder about the subproject activities	• Use existing grievance registrar and complaints box that has been already delivered in the City Corporation;					
	General degradation of the environment	• Ensure environmental enhancement measures such as tree plantation and traffic/ cautionary sign.					
Environmental impacts due to the key construction activities and corresponding mitigation measures for the Urban Roads and allied works							
Excavation/ Earth work/ Dismantle work/ site clearing work	Generation of solid and construction wastes due to the dismantle works; Generation of loose soil due to dismantle and site clearing work.	• Disposal of soil and construction wastes at designated dumping site at designated dumping site; • Cover exposed dry loose soil with fabric.					
	Accidents	• Carefully handle of the hammer and other equipment to be used for dismantle and site clearing work.					

Activity/ Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Monitoring Method		Monitoring Frequency	Implementation Status (Yes/No /NA)	Remarks
			Visual Observation	Analytical Analysis			
	Air pollution	• Regular maintenance of the equipment.					
ISG (Improved Sub grade)/ Sand filling	Air and dust pollution affecting nearby settlements	• Maintain adequate moisture content of soil during transportation, compaction and handling; • Carry the materials especially loose soil and sand with adequate cover.					
Setting up and operation of asphalt plant	Possible degradation of the air quality by the suspended particles and increase of the noise level from asphalt plant affecting nearby settlements;	• Locate plant away from residential settlements; • Consider use of emulsified bitumen.					
	Possible water pollution by bitumen and solvents;	• Avoid spills and proper collection and disposal of the generated spills.					
	Possible preparation of the bitumen in open air and using of charcoal and wood as fuel	• Strictly prohibit bitumen preparation in the open air and use of charcoal and wood as fuel.					
Cutting and welding of the reinforcement	Noise pollution due to rod cutter and welding machine if any	• Avoid using of rod cutter and wielding machine at night; • Avoid prolonged exposure to noise (produced by equipment) by workers.					
	Potential health and safety risks from rod cutter and welding machine if any	• Ensure use of the personal protective equipment's (helmet, goggles, gloves, safety boot); • Availability and access to first-aid equipment and medical supplies in case of any accidents.					

Activity/ Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Monitoring Method		Monitoring Frequency	Implementation Status (Yes/No /NA)	Remarks
			Visual Observation	Analytical Analysis			
RCC (reinforcement cement concrete) work	Air pollution due to black smoke emission from concrete mixer machine and vibrator machine	• Regular maintenance of the concrete mixer and vibrator machine to avoid any black smoke emission.					
	Noise nuisance from concrete mixer machine and vibrator machine	• Avoid operation of the concrete mixer and vibrator machine at night; • RCC work should be avoided at schooling time; • Inform local people about casting work and potential impacts.					
Environmental impacts due to the key construction activities and corresponding mitigation measures for the RCC drain and allied works							
Excavation/ Earth work/ Dismantle work for RCC drain	Generation of solid & construction wastes due to the dismantle works; Generation of debris and sediments/ clay soil due to the earth excavation work.	• Disposal of soil and construction wastes at designated dumping site; • Cover exposed earth works with much fabric.					
	Possible damage of road side infrastructure due to earth excavation for drain construction	• Ensure drum sheet palisading work for shallow depth to stabilize the structure; • Ensure plunk palisading work for shallow depth to stabilize the structure; • Ensure bolly drive or similar protective works to stabilize the structure.					
	Accidents	• Operate the hydraulic excavator carefully; • Operate the hammer carefully for the dismantle work.					
	Air pollution	• Regular maintenance of the equipment to					

Activity/ Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Monitoring Method		Monitoring Frequency	Implementation Status (Yes/No /NA)	Remarks
			Visual Observation	Analytical Analysis			
		avoid black smoke emission.					
Back filling work for drain	Air and dust pollution affecting nearby settlements	• Maintain adequate moisture content of soil during transportation, compaction and handling; • Carry the materials especially loose soil and sand with adequate cover.					
Cutting and welding of the reinforcement	Noise pollution due to rod cutter and welding machine if any	• Avoid using of rod cutter and wielding machine at night; • Avoid prolonged exposure to noise (produced by equipment) by workers.					
	Potential health and safety risks from rod cutter and welding machine if any	• Ensure use of the personal protective equipment's (helmet, goggles, gloves, safety boot); • Availability and access to first-aid equipment and medical supplies in case of any accidents.					
RCC (reinforcement cement concrete) work	Air pollution due to black smoke emission from concrete mixer machine and vibrator machine	• Regular maintenance of the concrete mixer and vibrator machine to avoid any black smoke emission.					
	Noise nuisance from concrete mixer machine and vibrator machine	• Avoid operation of the concrete mixer and vibrator machine at night; • RCC work should be avoided at schooling time; • Inform local people about casting work and potential impacts.					
RCC work for piles, grade beam	Air pollution	• Regular maintenance of the concrete mixer and vibrator machine.					

Activity/ Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Monitoring Method		Monitoring Frequency	Implementation Status (Yes/No /NA)	Remarks
			Visual Observation	Analytical Analysis			
and column (Retaining wall, bridge, culvert if needed)	Noise pollution	• Avoid operation of the concrete mixer and vibrator machine at night.					
Environmental impacts due to the key construction activities and corresponding mitigation measures for the public space enhancement to improve sustainability of amenities and revenue-generating infrastructures (e.g., bus terminals, kitchen markets, community centers, supermarkets, public toilets, public place/parks, municipal buildings and allied works							
Removing of the existing infrastructures and site clearing work	Potential health and safety risk and accidents	• Electric power and all services should be shut off within the structure before demolition works to be started; • Site should be fenced-off as much as; • Ensure use of the personal protective equipment where applicable; • Ensure careful operation of the machineries and equipment.					
	Generation of construction, solid wastes and noise nuisance	• Demolition work should avoid at night time and should follow normal working hour; • The demolition works shall be taken not any nuisance by way of noise and dust to the surrounding environment; • Ensure re-use of the materials and disposal of the wastes at the designated dumping site; • No wastes materials and debris shall be burned on the site; • No encroachment of demolition wastes on adjacent road side area and any private property; • Cover the exposed loose wastes with much fabric.					

Activity/ Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Monitoring Method		Monitoring Frequency	Implementation Status (Yes/No /NA)	Remarks
			Visual Observation	Analytical Analysis			
Scarifying of the existing pavement and filling, leveling and compaction work	Generation of loose soil due to the scarifying work	• Disposal of soil and construction wastes at the designated dumping site;					
	Accidents	• Carefully handle of the equipment.					
	Air and dust pollution affecting nearby settlement	• Regular maintenance of the equipment; • Maintain adequate moisture content of soil and sand during transportation, compaction and handling; • Carry the materials especially loose soil and sand with adequate cover.					
Cutting and welding of the reinforcement	Noise pollution due to rod cutter and welding machine if any	• Avoid using of rod cutter and wielding machine at night; • Avoid prolonged exposure to noise (produced by equipment) by workers.					
	Potential health and safety risks from rod cutter and welding machine if any	• Ensure use of the personal protective equipment's (helmet, ear plug, goggles, gloves, safety boot); • Availability and access to first-aid equipment and medical supplies in case of any accidents.					
RCC (reinforcement cement concrete) work	Air pollution due to black smoke emission from concrete mixer machine and vibrator machine	• Regular maintenance of the concrete mixer and vibrator machine to avoid any black smoke emission.					
	Noise nuisance from concrete mixer machine and vibrator machine	• Avoid operation of the concrete mixer and vibrator machine at night; • RCC work should be avoided at schooling time; • Inform local people about casting work and potential impacts.					

Activity/ Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Monitoring Method		Monitoring Frequency	Implementation Status (Yes/No /NA)	Remarks
			Visual Observation	Analytical Analysis			
- Fitting and fixing of the sanitary and electrical accessories; - Setting up electrical connection	Potential health and safety risks due to drill machine and hammer.	• Ensure use of the PPEs as per requirement.					
Environmental impacts due to the key construction activities and corresponding mitigation measures for Street light							
Setting up the pole and electrical connection	Potential health and safety risk	• Inform the local authority to switch off power during connection • Ensure use of the PPEs;					
Source of electricity and equipment	Reduce of resource i.e., use of electricity	• Provision of renewable energy(solar panel electrification)and use of environmental friendly equipment(LED bulb rather than CFL bulb)					

Prepared by (Name, Designation, Signature, Date): _____

Reviewed and Approved by (Name, Designation, Signature, Date):_____

Annex P

Format of quarterly/half-yearly/annual monitoring report

1. **Introduction**

2. **Sub-project Background**

Sub-project description including log frame and sub-project activities; Location and geographic extent of the sub-project; Potential environmental and social impacts due to the sub-project activities.

3. **Governing Policies and Legislations**

Briefly mention the policies and legislation that were followed during the monitoring procedure.

4. **Objective of the Monitoring Report**

5. **Environmental and Social Monitoring**

Summarize the environmental and social protection and pollution control/mitigation measures, as recommended in the agreed ESMF and sub-project specific ESMP. Summarize the meeting and the subsequent decision on the ES management those have been taken in the current period

6. **Management of Grievances**

7. **Conclusions and Recommendations**

8. **Annexure**

a) Environmental and Social Screening Checklist

b) Environment and Social Monitoring Checklist

Annex Q

ToR for the Environmental and Social Specialist

The key responsibilities of the Environmental and Social Specialist will be to assist the PMU/DSM in the implementation of Environmental and Social Management Framework (ESMF). S/he will ensure that all subprojects to be implemented under infrastructure and livelihood components will follow the guidelines provided in the ESMF, conduct and review environmental screening, ESA/ ESIA and implement Environmental Management Plans (EMPs) in accordance with the guidelines of the World Bank and environmental rules and regulations of the Government of Bangladesh. S/he will work as a team member for the preparation of RUTDP environmental safeguard implementation manual in light with ESMF. S/he will also be responsible for organizing the environmental management training program for capacity building of LGED staff and beneficiaries.

Environmental Specialist

The Environmental Specialist, preferably with the master's degree specialization in environmental science / environmental management / environmental engineering and also have experience in urban development or relevant field, shall have at test 10 years of working experience in environmental sector. Among, 5 years of working experience related to preparation of screening, EA, IEE, EIA, integration of environmental and social issues in the design, site-specific impact assessments, mitigation measures, implementation and operation of urban infrastructures related projects and oversee the compliance of environmental management Plan and preferably their monitoring & evaluation activities in multinational Donor fund (World Bank/similar institution funding project). Experience in community driven projects is preferred. Any reputed integrated research works and publication on environmental and social issues will give preference.

***Duties and Responsibilities of the* Environmental Specialist**

The specific roles and responsibilities of the **Environmental Specialist** shall include, but not limited to the following:

- Work under the supervision and guidance of PD;
- Lead the environmental safeguard related activities in the RUTDP
- Design and implement capacity development initiative in the RUTDP
- Develop, organize and deliver environmental training and orientation programs and workshops for the staff of the LGED, ULBs and beneficiaries
- Review categorization for each sub-project and recommend for further steps based on environmental screening
- Take part in the project document review process and assess the Environmental and social assessment (ESA), Environmental and social management plan (ESMP), attached to the project paper submitted by the DSM's ES Safeguard Team
- Assist PMU to prepare subproject appraisal report of subproject
- Assist PMU to review the prepared environmental document by DSM and PIU and updating IEEs in respect to environmental management plans, and assist in monitoring impact and mitigation measures associated with sub-projects
- Assist in preparation of IEE and in the environmental review of sub-project consisting of screening at ULBs level by PIU through a committee
- Assist PIU in the steps for preparing the IEE and EIA, capacity building and training, preparation of guidelines and procedure and sub-project specific guidance;
- Support environmental monitoring undertaken by PIU
- Undertake mitigation measures associated with the project construction works
- Carry out regular field visit to assess the quality and adequacy of screening, ESA, ESMP and also supervision of environmental activities
- Review and submit regular environmental monitoring and implementation progress reports to PD
- Prepare good practice dissemination notes based on the experience gained from site supervision
- Working with LGED management to strengthen its environmental capacity and mainstream integration of environmental consideration in project planning, implementation and operation.
- Any other responsibilities given by the PD.

Social Development Specialist

A social development specialist will be engaged for the LGED for technical assistance in developing and reviewing social management framework, social management report and ensure safeguards compliances of selected subprojects, contribute in social appraisal of subproject proposals for social screening and social management plans and supervision and monitoring of subproject implementation by ULBs.

***Duties and Responsibilities of the* Specialist**

The Social Development Specialist (SDS) will be engaged in PMU's ES Safeguard team under RUTDP, LGED. He/She will assist project preparation team within the administrative boundary. The SDS will carry out the following activities on behalf of the LGED-PMU:

- Work under the overall direction of the Project Director and report to him/her;
- Assist the Project Director to develop Social Management Framework considering country and global context for the Project highlighting the World Bank priorities and essential compliances;
- Assist the Project Director in the review and approval of various screening report related to social issues in accordance with agreed Social Management Framework for the Project;
- Responsible for capture possible issues and include those in social development, livelihood restoration, grievance response, and other social development activities related to subprojects;
- Responsible for ensuring compliance with respect to social management available rules and procedures particularly the preparation and implementation of subproject Social Management Plans, Resettlement Action Plan, and Tribal Peoples Development Plan;
- Manage the social issues and coordinate preparation of relevant RAPs to implement them with community participation.
- Facilitate community and WLCCs participation in planning and implementation of social management activities and introduce participatory planning, implementation and operation and maintenance using PRA approaches;
- Coordinate with various implementing agencies/ULBs) for overseeing the implementation and monitoring of social management actions and other social/community development activities;
- Maintain and upgrade the computerized database related to the social management actions, grievance redress and generation of periodical reports.
- Develop action plan to provide technical support to the ULBs in executing agreements of voluntary land donation, and contribution against compensation;
- Undertake field visits to project impact areas as appropriate to conduct field test in relation to social management; and,
- Manage any other activities related to social development and safeguard as required.
- Review of social screening reports, social impact assessment reports, social management plans, resettlement action plans and indigenous peoples plan submitted with Subproject Proposals for contributing in Subproject Appraisal and prepare Social Appraisal Reports for each subproject proposal at a standard acceptable by LGED and the World Bank;
- Any other responsibility assigned by the Project Director.

Qualification

The consultant will be a qualified social scientist with a Master's degree in Social Sciences preferably in Social Work / Sociology / Anthropology/ Development Studies. He/she will have the following level of experience in relevant fields:

- At least 10 years of work experience and proven track record in relevant field that shall include at least 5 years' work experience in land acquisition and involuntary resettlement area of developing countries especially in Bangladesh and South-East Asia.
- Should have knowledge of computer applications to manage database and generation of reports is essential;
- Should possess skills in using participatory rural/rapid approaches in planning, implementation and monitoring and evaluation;
- Should have good documentation skills, especially in documenting social management process, success/ failure stories and lessons learnt; and
- Should have experience of working on similar or related projects financed by the external / multilateral agencies is an added advantage.
- Strong familiarity with GoB's land acquisition rules and regulations and World Bank's current policies of involuntary resettlement, indigenous peoples, and other social development guidelines like gender, inclusion and participation and accountability.