

# Environmental Assessment and Review Framework

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**Bangladesh: Narayanganj Green and Resilient Urban  
Development Project – Construction of Sheds and  
Installation of Water ATMs**

**Package Number NCC/NGRUDP/W-15**

Prepared by Narayanganj City Corporation, Government of Bangladesh, for the Asian Development Bank (ADB).

## CURRENCY EQUIVALENTS

(as of 1 January 2024)

Currency unit	–	Bangladesh Taka (BDT)
BDT1.00	=	\$0.01
\$1.00	=	BDT 108.50

## ABBREVIATIONS

ADB	–	Asian Development Bank
BDT	–	Bangladesh Taka
BOD	–	biochemical oxygen demand
COD	–	chemical oxygen demand
DMA	–	district metering area
DMZ	–	district metering zone
DO	–	dissolved oxygen
DOE	–	Department of Environment
DTW	–	deep tube well
EA	–	executing agency
EIA	–	environmental impact assessment
ECA	–	Environmental Conservation Act
ECR	–	Environmental Conservation Rules
ECC	–	environmental clearance certificate
EMP	–	environmental management plan
GOB	–	Government of Bangladesh
GRC	–	grievance redress committee
GRM	–	grievance redress mechanism
IEE	–	initial environmental examination
NCC	–	Narayanganj City Corporation
NGO	–	nongovernment organization
NOC	–	no objection certificate
O&M	–	operation and maintenance
PMU	–	project management unit
REA	–	rapid environmental assessment
ROW	–	right of way
SPS	–	safeguard policy statement
TSS	–	total suspended solid

## NOTE

In this report, "\$" refers to United States dollar.

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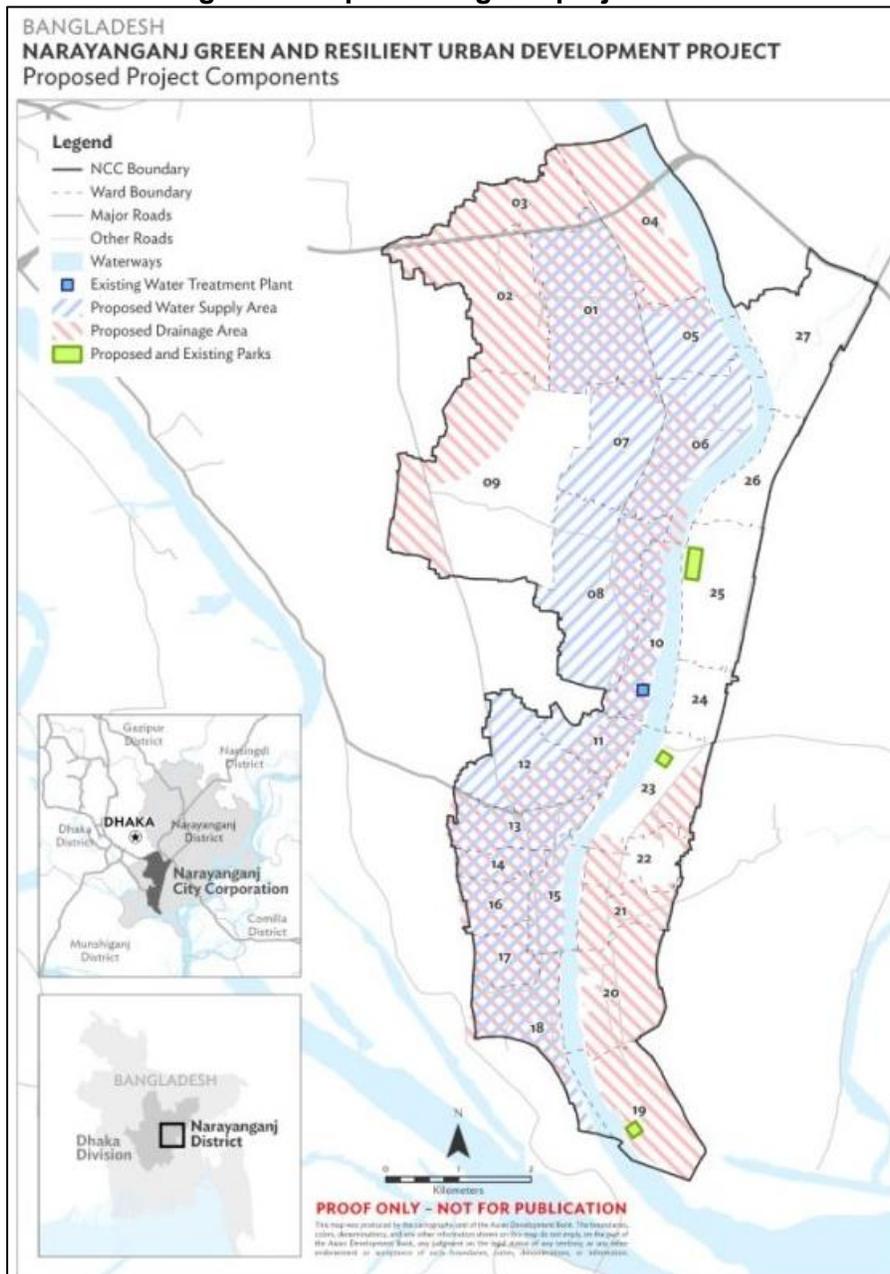
## I. INTRODUCTION

### A. Background

The Government of Bangladesh (GOB), under its Eighth Five-Year Plan targets to provide 100% of the urban population with access to an improved water source, and 80% of city dwellers with safely managed sanitation services by 2026. In response to this and to design ensuing investment projects in selected secondary towns and city corporations of Bangladesh, ADB under Project Readiness Financing (PRF) has constituted an Urban Infrastructure Improvement Preparatory Facility (UIIPF) for Bangladesh to help manage the technical and implementation issues upfront and secure high readiness of the ensuing investment projects for ADB financing. Under UIIPF, the Department of Public Health Engineering (DPHE) is preparing water supply and sanitation investment projects where development is lagging.

Narayanganj City is the fourth most populated city in Bangladesh and economically important because it is adjacent to Dhaka. The UIIPF facility thus aims to build NCC's capacity to ensure the sustainability of urban infrastructure investments, and their operation and management. As part of capacity building, the facility is supporting the NCC in developing Narayanganj Green and Resilient Urban Development Project (hereafter referred to as "project" or "overall project" or "NGRUDP") comprising preparation of master plans, feasibility studies, detailed design for the proposed infrastructure facilities for water supply, drainage, and river-front development in NCC.

**Figure 1: Map Showing Subproject Area<sup>a</sup>**



<sup>a</sup> Disclaimer: Boundaries, colors, denominations or any other information shown on this map do not imply, on the part of ADB, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries, colors, denominations, or information.

## B. Outcome and Outputs of the Project

**Outcome.** The project is aligned with the following impacts: (i) sustainable and inclusive urban development achieved, and (ii) safe and climate-resilient delta area achieved. The project will have the following outcome: NCC's resilience, and access to inclusive, reliable, and sustainable urban services improved.

**Output 1: Climate-resilient and inclusive infrastructure developed and/or improved.**

The project will improve and expand the existing water supply system for inclusive, resilient, and safely managed continuous drinking water supply services in the priority area in NCC to serve 0.4 million people. These will include improvements to the existing WTP, an upgrade and expansion of the network with DMA approaches for reducing nonrevenue water (NRW),<sup>1</sup> and installation of deep tube wells in selected areas including low-income communities, for supply augmentation.<sup>2</sup> The project will also establish and improve stormwater drainage system in the priority area to reduce water logging and flood risk with climate and disaster-resilient design and nature-based solutions such as introducing soil and vegetation. Further, the project will develop total 15 hectares of green public parks to improve quality of life of the citizens, with features responsive to women and vulnerable, to provide recreational spaces and reduce urban heat.<sup>3</sup> The public parks will be attached with total 6 kilometers (km) walkway along the eastern side of the Shitalakshya river that also function as embankment.

**Output 2: Capacity and awareness of NCC and local community in climate-resilient, sustainable, and inclusive urban services strengthened.**

To improve sustainability and quality of services through the facilities developed under output 1, the project will strengthen NCC staff capacity (at least 90% of female staff) in climate-resilient, sustainable, and gender equality and social inclusion (GESI) responsive service delivery. It will develop service improvement plans including financial aspects for sustainable O&M. For water supply, NCC's capacity on O&M will be improved through on-the-job training by the contractor that will be responsible for O&M for the initial five years. DMA management and water quality monitoring will be supported. A water supply master plan will be prepared to improve the services in wider areas in NCC, and to set the longer-term development strategy for transformation toward climate- and disaster-resilience.<sup>4</sup> The project will also support preparation of masterplans for wastewater, solid waste management, and urban planning to improve living environment in an integrated manner, combined with the intervention for drainage, and advance climate and disaster resilience. The project will also support GESI-sensitive community awareness and behavior change campaigns on water, sanitation and hygiene, climate resilience, and sustainable services to maximize the health and economic impact of the investments.<sup>5</sup> This output, together with the infrastructure to be developed under the output 1, is expected to lead to achieving the intended outcome.

**Output 3. Institutional capacity and governance of other municipal services strengthened.**

To improve other municipal services, the project will support trainings of the NCC staff and elected representatives covering laws, regulations, city planning, and development. An action plan for urban governance and service improvement with monitoring tools will be prepared, involving citizen participation. It will build on NCC's successful past performance in governance improvement. The project will also support establishing a unit within NCC for giving trainings and

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<sup>1</sup> Improvements in the existing network will be part of long-term strategy to ensure judicious use of existing water supply, and prepare for switching from ground to surface water source. The phased shift to surface water resource will be based on DWASA's experience in similar projects. Digital applications such as smart water meters, and online billing and collection will be introduced or strengthened to augment revenue and improve operational efficiency.

<sup>2</sup> Sustainability of the ground water yield was confirmed through survey including water quality and impact to depletion. Selected areas where these were not confirmed were excluded from the project scope. The support would be an interim solution to meet the demand until completion of switching to surface water resource using the Meghna river.

<sup>3</sup> The western side of the river has an ongoing government-funded project to develop a road with embankment.

<sup>4</sup> The masterplan will also explore wider climate adaptation responses through new technology, policies, and governance. Output 2 will build on ADB's experience in the ADB. 2014. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Administration of Loan Grants to the People's Republic of Bangladesh for the Coastal Towns Environmental Infrastructure Project*. Manila.

<sup>5</sup> For drainage, setting design codes to reduce runoffs, flood risk mapping, and early warning systems will be explored.

implementing the action plan. The unit will also function as a data center for assets inventory and digital archiving of documents and records. The project will build capacity of NCC staff to gradually take over full responsibility of these as their routine operation. The project will also strengthen NCC's administrative efficiency through digitalization of management systems in areas such as customers records, asset management, and procurement. For NCC's revenue augmentation including strengthening property tax and municipal fees, a separate technical assistance (TA) by ADB's Office of Markets Development and Public-Private Partnership (OMDP) is under discussion with NCC.<sup>6</sup> Combination of these support is expected to help NCC establish creditworthiness and become an investable city. This output is expected to contribute to achieving the outcome through consolidated financial, administrative, and governance strengthening.

### **C. Purpose of the Environmental Assessment and Review Framework**

This EARF sets guidance on environmental safeguard screening, environmental assessment, institutional arrangements, consultations, information disclosure, reporting and other processes to be followed for the future subproject and/or component related to the construction and operation of water automatic teller machines (water ATMs) (hereafter referred to as "subproject" or "Water ATM subproject"), where final detailed design will take place after ADB Board approval of the loan. Site selection and other environmental considerations for these future water ATMs will be in accordance with the environmental criteria as outlined in this EARF. The government agrees with ADB on the guidance provided in this EARF to ensure compliance with the requirements specified in ADB SPS and relevant government laws, rules and regulations.

In particular, this EARF:

- (i) provides the overall description of the project, and its subprojects and components;
- (ii) explains the general anticipated environmental impacts of the future water ATM subproject;
- (iii) specifies the requirements that will be followed in relation to future screening and categorization, assessment, and planning, including arrangements for meaningful consultation with affected people and other stakeholders and information disclosure requirements and, where applicable, safeguard criteria that are to be used in selecting the subproject sites (i.e. Water ATM sites);
- (iv) assesses the adequacy of capacity of NCC, as the executing/implementing agency, to comply with ADB SPS environmental requirements and applicable national and international laws, and identify needs for capacity building;
- (v) specifies implementation procedures, including budgeting, institutional arrangements, and capacity development;
- (vi) specifies monitoring and reporting requirements; and
- (vii) describes the responsibilities of NCC, PMU and its consultants, and ADB in relation to the preparation, implementation, and progress review of safeguard documents of the subproject.

The EARF will be reviewed and revised, if warranted, especially with regard to any change in relevant legal and regulatory frameworks of the Government of Bangladesh.

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<sup>6</sup> The project will support establishing web-based geographic information system mapping and survey to complement the capacity building support through OMDP.

## II. THE WATER ATM SUBPROJECT

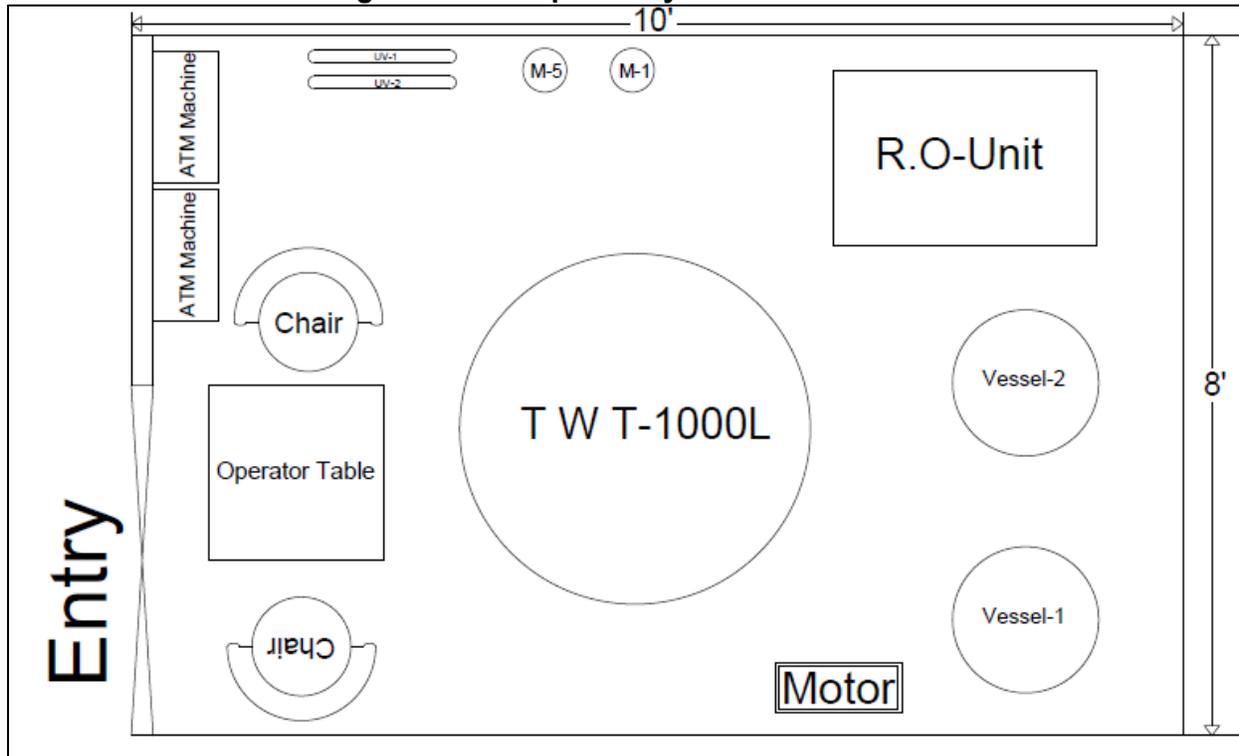
The overall NGRUDP will include funding for the construction of 27 sheds for Water ATMs, with one shed each for the 27 wards of NCC. Each shed will cover an approximate area of 7.44 m<sup>2</sup> with dimension of approximately 3.05m x 2.44m (10 feet x 8 feet). Conceptual layout and 3D rendering of this shed with the water ATM facilities are shown in the following figures, which was adopted from the Water ATMs being built in Dhaka and Chattogram under the initiative of DWASA and Chattogram WASA, respectively, in partnership with Drinkwell.<sup>7</sup> Final layout and design, and specific locations will be determined during the detailed design stage.

Per conceptual design proposed under the project, the Water ATM will have a maximum capacity of 100 liters per hour and will use reverse osmosis process and treatment technology to treat water to compliance level with the National Drinking Water Quality Standards. The source of water for the Water ATMs will vary depending on the location, which could be an existing deep tube well, a new deep tube well, or piped water from the water supply distribution network if available in the area.

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<sup>7</sup> Drinkwell is a US-based social enterprise with a team of full time employees. It collaborates with Water ATM operators across Bangladesh and India via existing partners.

**Figure 2: Conceptual Layout of Water ATM**



Source: Drinkwell presentation document to ADB and Narayanganj City Corporation

**Figure 3: 3D Rendering of Conceptual Design of Water ATM Shed**



Source: Drinkwell presentation document to ADB and Narayanganj City Corporation

#### **A. Key Exclusion and Environmental Criteria for the Subproject**

The sites and other design aspects of the Water ATM Subproject will be selected based on key exclusion and specific environment safeguards criteria. Any proposed Water ATM site and design which do not fully meet the key exclusion and specific environmental safeguards criteria listed below may be rejected. Table 1 summarizes the key exclusion criteria while **Table 2** summarizes the specific environmental safeguards criteria.

**Table 1: Key Exclusion Criteria**

<b>Exclusion criteria include but is not limited to:</b>	<b>Remarks</b>
(i) Environmental category A subprojects and components per ADB SPS. Triggers include impacts that are considered diverse, irreversible and unprecedented, and/or subprojects being highly complex and sensitive. <sup>8</sup>	<ul style="list-style-type: none"> <li>For future Water ATM subprojects, NCC shall consider only the sites and final detailed designs that do not trigger environmental category A per ADB SPS. In unavoidable circumstances that a future subproject is deemed as environment category A, a major change in scope of the entire project shall be proposed for ADB approval.<sup>9</sup></li> <li>Bidding and awarding of contracts for such subproject shall not proceed without ADB approval of the proposed major change in scope.</li> </ul>
(ii) Activities listed in ADB's Prohibited Investment Activities List (Appendix 5 of ADB SPS). These activities do not qualify for ADB's financing. See Appendix 1 hereof for complete list.	
(iii) Involves components, processes and technologies that pose significant threat to public health and the environment.	
(iv) Results in destruction of or encroachment onto physical cultural resources such as archaeological monuments; heritage sites; and movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance.	
(v) Leads to degradation of cultural properties, and loss of cultural heritage values and tourism revenues.	

**Table 2: Site Selection Criteria for the Water ATM Subproject**

<b>Criteria</b>	<b>Remarks</b>
Complies with all requirements of relevant national, state and local laws, rules and regulations.	See Section IV of this EARF.
Complies with all requirements of ADB SPS, 2009 and follow procedures set out in the EARF.	See Section IV of this EARF.
Sufficient space for all allied infrastructures, including easements to allow additional space to work around during construction phase; and shall not encroach any other private-owned lands or properties;	
No risk of landslide or not an unstable area;	

<sup>8</sup> Projects that ADB deems as highly risky or contentious or involve serious and multidimensional and generally interrelated potential social and/or environmental impacts.

<sup>9</sup> In a proposed major change in scope due to stricter environmental categorization of a proposed subproject than the approved environmental categorization, ADB Safeguard Policy Statement (SPS), 2009 requires the following: (i) conduct of new environmental impact assessment and prepare an environmental impact assessment (EIA) report; (ii) submit EIA report to ADB for review, which will include a peer-review among relevant departments within ADB; and (iii) disclose on ADB website the new EIA report 120 days prior to the approval by ADB of the proposed major change in scope for the project.

Criteria	Remarks
Not located in flood zones and/or not adjacent to natural water courses (must not be within 30 meters from the edge of major streams, and/or must not be within 15 meters from the edge of small streams).	
Not located within or near environmentally sensitive locations (must be at minimum distance of 100m from nearest boundary), including sites with national or international designation for nature conservation, cultural heritage, or any other purposes.	This minimum distance must be strictly observed especially with regard to sites with sensitive structures. Ensure that no damage is caused to any of the structures by (a) confirming that transport of construction materials and/or access of construction equipment will not pass through the sites.
Availability of existing tubewell or water supply pipeline is preferred to avoid additional drilling works;	
Accessible and within walking distance from low-income communities, which the water ATMs were intended for; and	
No cutting of trees required.	When mature trees must be removed, new trees must be planted following the compensatory replacement required by the government.

ADB = Asian Development Bank, EARF = environmental assessment and review framework, SPS = safeguard policy statement

### III. GENERAL ANTICIPATED ENVIRONMENTAL IMPACTS

The construction of the water ATM sheds and the operation of the water ATMs are not likely to have significant adverse environmental impacts that are irreversible, diverse or unprecedented. Potential impacts are unlikely to affect areas far beyond the sites. These impacts are site-specific and local in nature, and few, if any of them, are irreversible. Planning principles, selection criteria, and design considerations will be reviewed and incorporated into the site planning and design process wherever possible; thus, environmental impacts as being due to the location or design will not be significant. For any potential impacts during the construction phase (e.g., dust, noise, vibration, water pollution, etc.), mitigation measures will be developed to reduce all negative impacts to acceptable levels. In most cases, mitigation measures can be designed with uncomplicated measures commonly used at construction sites and known to civil works contractors. Potential environmental impacts during operation phase, particularly with regard to water pollution and solid waste disposal, are avoided through operational measures that shall be included in contract documents and implemented by the Water ATM operator.

The most evident impacts are expected during construction phase when mobilization by contractors and execution of civil works take place. While considered as smaller civil works relative to other infrastructure projects, the nature of these works will still generate impacts, issues and concerns prior to construction, during construction and during operation phase.

Table 3 below outlines some of the potential impacts, issues, and concerns from planning, construction and operation of the Water ATMs. Other impacts may be identified during the implementation phase, and the lists in the table are only indicative. Therefore, the future

environmental assessment and corresponding assessment reports shall consider and reflect those newly identified impacts.

**Table 3: Potential Environmental Impacts, Issues, and Concerns Related to Construction of Water ATM Sheds and Operation of Water ATMs**  
(No Mitigation Measures Scenario)

<b>Design and Location</b>	<b>Construction</b>	<b>Operation and Maintenance</b>
(i) Impact of climate change such as extended heavy precipitation could trigger flooding in proposed sites.	(i) Interference with other utilities and blocking of access to residential establishments and/or other community facilities.	(i) Risks and vulnerabilities related to community health and safety due to improper maintenance of the Water ATMs.
(ii) Potential high organic, inorganic or elemental content of groundwater (if deep tube well is source of raw water) that is beyond the capacity of the reverse osmosis treatment technology.	(ii) Dislocation or involuntary resettlement of people.	(ii) Discharge of process wastewater into drains and/or receiving bodies of water.
(iii) Potential loss of trees within and around areas of proposed sites.	(iii) Disproportionate impacts on the poor, women and children, or other vulnerable groups in the communities.	(iii) Contamination of ground waters due to leakages of chemicals used in the water treatment process.
(iv) Potential loss of other types of vegetations at proposed sites due to site clearance prior to construction activities.	(iv) Noise and vibration due to vehicle mobilization and maneuvering, and execution of other civil works.	(iv) Impact on daily traffic.
(v) Selection and sourcing of raw materials for construction. Extraction of raw materials needed for construction could impact the environment at the source. For example, sources of gravel and sand sourced from quarrying activities along river banks, etc.	(v) Dust due to excavation, other civil works, and vehicle mobilization and maneuvering.	(v) Positive impacts – availability of affordable and readily available drinking water that complies with the NDWQS, which will enhance people's well-being, particularly those in the low-income communities.
(vi) Damage to existing infrastructures such as underground and other community utilities.	(vi) Air pollution due to emissions from construction vehicles and heavy equipment.	
(vii) Disproportionate impacts on the poor, women and children, or other vulnerable groups in the communities.	(vii) Risks and vulnerabilities related to occupational health and safety due to physical, chemical, and biological hazards.	
(viii) Environmental pollution (surface water, groundwater, soil, land, odor, noise, etc.) due to treatment processes involved.	(viii) Potential infection of workers and community people from emerging infectious diseases.	
	(ix) Road blocking and temporary flooding due to land preparation during the rainy season.	
	(x) Disturbance to pedestrian traffic due to transport of construction materials and wastes, and road closures or re-routing due to construction works.	
	(xi) Temporary silt runoff.	
	(xii) Population increase that causes increased burden on social infrastructure (such as sanitation system) in the area.	

Design and Location	Construction	Operation and Maintenance
	<ul style="list-style-type: none"> <li>(xiii) Social conflicts between construction workers from other areas and community workers.</li> <li>(xiv) Risks to community health and safety due to the transport, storage, and use and/or disposal of construction materials, fuel and other chemicals.</li> <li>(xv) Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community.</li> <li>(xvi) Clearance of existing land, vegetation or structures.</li> <li>(xvii) Use of resources (materials, water, energy, etc.).</li> <li>(xviii) Solid wastes such as spoils, overburden, etc.</li> <li>(xix) Emission from burning of waste in open air (e.g. worker's temporary camp, slash materials, construction debris).</li> <li>(xx) Pollution of river systems or receiving bodies of water.</li> <li>(xxi) Impact on physical cultural resources and other material assets such as archaeology.</li> <li>(xxii) Destruction of national parks, protected areas, buffer zones of protected areas, and landscape aesthetics.</li> <li>(xxiii) Increased traffic in the area.</li> <li>(xxiv) Impact of flooding.</li> </ul>	

#### IV. ASSESSMENT OF LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY

ADB will not finance any project if it does not comply with ADB SPS, 2009 nor will it finance any project if it does not comply with its host country's environmental and social safeguard laws. Where discrepancy between ADB and Government of Bangladesh policies exist, the stricter policy will prevail. Moreover, ADB SPS, 2009 applies to all ADB-financed and/or ADB-administered sovereign projects, and their components regardless of the source of financing, including investment projects funded by a loan; and/or a grant; and/or other means.

## A. ADB Safeguard Policy Statement

. ADB SPS, 2009 requires borrowers to meet a set of requirements (Safeguards Requirements 1) when delivering environmental safeguards for projects supported by ADB. The objectives are to ensure the environmental soundness and sustainability of projects, and to support the integration of environmental considerations into the project decision-making process. Hence, the project is required to comply with these requirements. Summary of the step-by-step process is discussed below in this section. Detailed discussions are provided in the ADB SPS, 2009.<sup>10</sup>

. **Screening and Categorization.** Every proposed subproject under the overall NGRUDP is to be screened for its expected environmental impacts and is assigned to a specific category. Categorization is to be based on the most environmental sensitive component. However, for infrastructure component(s) that can trigger Category A or with potentially significant adverse impacts that are diverse, irreversible, or unprecedented, NCC, through PMU, shall examine alternatives to the infrastructure's location, and/or design that would avoid, and, if avoidance is not possible, minimize adverse environmental impacts and risks, and to meet Category B classification. In particular, the rationale for selecting the locations and design for the Water ATMs will be properly documented.

. **Environmental Assessment.** NCC, through PMU, shall undertake environmental assessment that will include description of environmental and social baseline to provide an understanding of current conditions forming the benchmark against which impacts are assessed. Environmental impacts and risks will be analyzed for all relevant stages of the project cycle, including design and planning stage, construction, and operations. If applicable, the assessment will also include analysis for environmental impacts and risks during decommissioning and post-closure activities such as rehabilitation or restoration. For Category B projects or undertaking, documentation of environmental assessment is done through an initial environmental examination (IEE) report. The structure and composition of the typical IEE report is provided in Appendix 2.

. **Environmental Planning and Management.** NCC, through PMU, shall prepare environmental management plan (EMP) to be included in the IEE report. The EMP shall describe and address the potential impacts and risks identified by the environmental assessment. The level of detail and complexity of the EMP and the priority of the identified measures and actions will be commensurate with the identified impacts and risks. The EMP shall include the proposed mitigation measures, environmental monitoring and reporting requirements, emergency response procedures, related institutional or organizational arrangements, capacity development and training measures, implementation schedule, cost estimates, and performance indicators.

. **Public Disclosure.** NCC, through PMU, shall submit to ADB for disclosure on ADB website the following reports so affected people, other stakeholders, and the public can provide meaningful inputs into the project's design and implementation:<sup>11</sup>

- (i) final IEE upon receipt;
- (ii) a new or updated IEE and corrective action plan prepared during implementation, if any; and

<sup>10</sup> ADB. 2009. [Safeguard Policy Statement](#). Manila.

<sup>11</sup> Per ADB SPS, 2009, prior to disclosure on ADB website, ADB reviews the "borrower's/client's social and environmental assessment and plans to ensure that safeguard measures are in place to avoid, wherever possible, and minimize, mitigate, and compensate for adverse social and environmental impacts in compliance with ADB's safeguard policy principles and Safeguard Requirements 1-4."

- (iii) environmental monitoring reports, including corrective action plan, if any, submitted during implementation upon receipt.

. **Consultation and Participation.** NCC, through PMU, shall carry out meaningful consultation<sup>12</sup> with affected people and other concerned stakeholders, including civil society, and facilitate their informed participation. The consultation process and its results are to be documented and reflected in the environmental assessment report.

. **Grievance Redress Mechanism.** NCC, through PMU, shall utilize the grievance redress mechanism (GRM) discussed in detail in Section VI below. The GRM will aim to receive and facilitate resolution of affected peoples' concerns, complaints, and grievances about the project's environmental performance.

. **Monitoring and Reporting.** NCC, through PMU, shall monitor, measure and document the progress of implementation of the EMP. If necessary, PMU will identify the necessary corrective actions, and reflect them in a corrective action plan that is time-bound, budgeted and agreed between ADB and NCC. PMU will prepare and submit to ADB semi-annual environmental monitoring reports that describe progress with implementation of the EMP and compliance issues and corrective actions, if any. Reporting will continue until ADB issues a completion report for the project.

. **Unanticipated Environmental Impacts.** Where unanticipated environmental impacts become apparent during implementation, NCC, through PMU, shall update the environmental assessment and EMP or prepare a new environmental assessment and EMP to assess the potential impacts, evaluate the alternatives, and outline mitigation measures and resources to address those impacts.

. **Pollution Prevention and Control Technologies.** During the design, construction, and operation of the project, NCC, through PMU, shall apply pollution prevention and control technologies and practices consistent with international good practice, as reflected in internationally recognized standards such as the World Bank Group's Environmental, Health and Safety Guidelines.<sup>13</sup> These standards contain performance levels and measures that are normally acceptable and applicable to the project infrastructures. When the government's regulations differ from these levels and measures, the project shall achieve whichever is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, NCC, through PMU, will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented in ADB SPS, 2009.

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<sup>12</sup> Per ADB SPS, 2009, meaningful consultation means a process that (i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle; (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) is undertaken in an atmosphere free of intimidation or coercion; (iv) is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues.

<sup>13</sup> World Bank Group. 2007. *Environmental, Health, and Safety General Guidelines*. Washington, D.C. [World Bank Group Environmental, Health, and Safety Guidelines \(ifc.org\)](http://www.worldbank.org/ehs)

. **Occupational Health and Safety.** NCC, through the PMU,<sup>14</sup> shall ensure that workers<sup>15</sup> are provided with a safe and healthy working environment, considering risks inherent to the sector and specific classes of hazards in the project work areas, including physical, chemical, biological, and radiological hazards. PMU shall ensure to take steps to prevent accidents, injury, and disease arising from, associated with, or occurring during the course of work by (i) identifying and minimizing, so far as reasonably practicable, the causes of potential hazards to workers; (ii) providing preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances; (iii) providing appropriate equipment to minimize risks and requiring and enforcing its use; (iv) training workers and providing them with appropriate incentives to use and comply with health and safety procedures and protective equipment; (v) enforcing appropriate protocols necessary to prevent the spread of communicable diseases, including emerging infectious diseases; (vi) documenting and reporting occupational accidents, diseases, and incidents; and (vii) having emergency prevention, preparedness, and response arrangements in place.

. PMU shall ensure to apply preventive and protective measures consistent with international good practice, as reflected in internationally recognized standards such as the World Bank Group's Environmental, Health and Safety Guidelines (footnote 13).

. **Community Health and Safety.** NCC through PMU shall ensure to identify and assess the risks to, and potential impacts on, the safety of affected communities during the design, construction, and operation of the project infrastructures, and will establish preventive measures and plans to address them in a manner commensurate with the identified risks and impacts. PMU shall also include and enforce additional protocols to prevent the spread of communicable diseases to communities, including emerging infectious diseases (e.g. COVID-19).

. NCC shall ensure to apply preventive and protective measures for both occupational and community health and safety consistent with international good practice, as reflected in internationally recognized standards such as the World Bank Group's Environmental, Health and Safety Guidelines.<sup>16</sup> PMU shall also adhere to necessary protocols in response to infectious diseases such as COVID-19 and any other new diseases that may emerge in the future, consistent with the guidelines of relevant government healthcare agencies and the World Health Organization.

. **Physical Cultural Resources.** NCC, through PMU, shall locate and design the Water ATMs that will avoid significant damage to physical cultural resources. Such resources likely to be affected by the project activities or infrastructures will be identified, and qualified and experienced experts will assess the potential impacts on these resources using field-based surveys as an integral part of the environmental assessment process. When the proposed location of an infrastructure (e.g. Water ATM) is in areas where physical cultural resources are expected to be found as determined during the environmental assessment process, chance finds procedures shall be included in the EMP.

. **Biodiversity.** NCC, through PMU, shall assess the significance of the project's impacts and risks on biodiversity and natural resources as an integral part of the environmental

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<sup>14</sup> In case where responsibility is delegated to contractors during construction phase, PMU shall ensure that the responsibilities on occupational health and safety as described herein are included in the contract documents.

<sup>15</sup> Including nonemployee workers engaged by NCC through contractors or other intermediaries to work on project sites or perform work directly related to the project's core functions.

<sup>16</sup> World Bank Group, 2007. *Environmental, Health, and Safety General Guidelines*. Washington, DC. [Final - General EHS Guidelines, APRIL 29.doc \(ifc.org\) Final](#)

assessment process. The assessment will focus on the major threats to biodiversity, which include destruction of habitat and introduction of invasive alien species, and on the use of natural resources in an unsustainable manner. PMU will need to identify measures to avoid, minimize, or mitigate potentially adverse impacts and risks and, as a last resort, propose compensatory measures, such as biodiversity offsets, to no net loss or a net gain of the affected biodiversity.

. **Environmental Audit.** When the project involves existing activities or facilities, NCC, through PMU, shall ensure that relevant external experts will perform environmental audits to determine the existence of any areas where the project infrastructure may cause or is causing environmental risks or impacts. If the project does not foresee any new major expansion, the audit constitutes the environmental assessment for the project.

31. **Bidding and Contract Documents.** The IEE reports and EMPs are to be included in bidding and contract documents and verified by the PMU. PMU shall also ensure that bidding and contract documents include specific provisions requiring contractors to (i) comply with all other conditions required by ADB,<sup>17</sup> and (ii) to submit to PMU, for review and approval, a SEMP, including (a) proposed sites/locations for construction work camps, storage areas, hauling roads, lay down areas, disposal areas for solid and hazardous wastes; (b) specific mitigation measures following the approved EMP; (c) monitoring program as per EMP; and (d) budget for SEMP implementation. Due to relatively small footprint and very site-specific nature of the Water ATM, there may be instances when the EMPs developed as indicated in the IEE reports are considered site-specific. No works can commence prior to approval of EMP or approved SEMP. A copy of the EMP and/or approved SEMP will be kept on site during the construction period at all times. Non-compliance with, or any deviation from, the conditions set out in the EMP and/or SEMP constitutes a failure in compliance and shall require corrective actions.

. **Conditions for Award of Contract and Commencement of Work.** NCC, through PMU, shall not award any works contract for a proposed infrastructure under the project until (i) relevant provisions from the EMP are incorporated into the works contract; (ii) the IEE is updated to reflect infrastructure's detailed design and PMU has obtained ADB's clearance of such IEE report; and (iii) government-approved IEE (i.e. IEE in compliance with government regulations) and other necessary permits from relevant government agencies have been obtained. For "design, build, and operate" type contracts, PMU shall ensure no works for a proposed infrastructure component which involves environmental impacts shall commence until (i) relevant provisions from the EMP are incorporated into the works contract, and (ii) the IEE report is updated to reflect infrastructure's detailed design and PMU has obtained ADB's clearance for such IEE report.

## **B. National Environmental Assessment Law of Bangladesh**

### **1. Environmental Conservation Act (ECA), 1995 (and subsequent amendments)**

. Provides for the conservation of environment, improvement of environmental standards and control and mitigation of environmental pollution. In line with these provisions of the Act, the Environmental Conservation Rules have been framed with various amendments. This Act provides for (i) remedial measures for injury to ecosystem; (ii) provides for any affected person due to environmental pollution to apply to Department of Environment (DOE) for remediation of

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<sup>17</sup> Contractors to comply with (i) all applicable labor laws and core labor standards on (a) prohibition of child labor as defined in national legislation for construction and maintenance activities; (b) equal pay for equal work of equal value regardless of gender, ethnicity, or caste; and (c) elimination of forced labor; and with (ii) the requirement to disseminate information on sexually transmitted diseases, including HIV/AIDS, to employees and local communities surrounding the project sites.

the damage; (iii) discharge of excessive environmental pollutants; (iv) inspection of any activity for testing any equipment or plant for compliance to the environment act, including power to take samples for compliance; (v) power to make rules and standards with reference to environment; and (vi) penalty for non-conformance to environment act under the various sections.

- . The main strategies of the Act can be summarized as:
  - (i) Declaration of ecologically critical areas, and restriction on the operation and process, which can be carried, out or cannot be initiated in the ecologically critical areas.
  - (ii) Regulation in respect of vehicles emitting smoke harmful for the environment.
  - (iii) Environmental clearance.
  - (iv) Regulation of the industries and other development activities – discharge permit.
  - (v) Promulgation of standards for quality of air, water, noise and soil for different areas for different purposes
  - (vi) Promulgation of standard limit for discharging and emitting waste.
  - (vii) Formulation and declaration of environmental guidelines.

. Amendment 2000 of the Bangladesh Environmental Conservation Act focuses on: (i) ascertaining responsibility for Compensation in cases of damage to ecosystems, (ii) increased provision of punitive measures both for fines and imprisonment, and (iii) fixing authority on cognizance of offences. The next amendment in 2002 emphasizes on: (i) restriction on polluting automobiles, (ii) restriction on the sale and production of environmentally harmful items like polythene bags, (iii) assistance from law enforcement agencies for environmental actions, (iv) break up of punitive measures, and (v) authority to try environmental cases. The latest amendment in 2010 declares demarcation of wetlands and water bodies, and imposes restrictions on hazardous waste import, transportation, storage etc.; and activities on cutting of hills and/or mountains along with Ecologically Critical Areas. Failure to comply with any part of the Environment Conservation Act 1995 may result in punishment to a maximum of 5 years' imprisonment or a maximum fine of BDT 100,000, or both.

## **2. Environment Conservation Rules, 2023**

. The Environment Conservation Rules, 2023 (ECR, 2023) provide the set of rules under the Environment Conservation Act, 1995. These provide, amongst other items, standards and guidelines for:

- (i) Categorization of industries and development projects;
- (ii) Procedure for obtaining environmental clearance; and
- (iii) Environmental quality standards in relation to inland surface water, coastal water, drinking water, sewage water and industrial waste water quality parameters are mentioned under schedule 2, 3, 4 and 5. Whereas, standards for air pollution and noise, are referenced to the Air Pollution Control Rules, 2022 and Noise Pollution Control Rules, 2006, respectively.

. ECR, 2023 classifies industrial units and development projects into four categories for the purpose of issuance of Environmental Clearance Certificate (ECC). These categories are: Green; Yellow; Orange; and Red. Per ECR 2023, all existing and new industries and projects in Orange and Red category require an Environmental Management Plan (EMP) to be prepared (after conducting an IEE or EIA) and submitted along with other necessary papers while applying for environmental clearance.

### 3. Overview of the Environmental Approval Process

Key legislation governing the environmental approvals process for the proposed overall project (and hence the subproject) is the Bangladesh Environmental Conservation Act, 1995 (ECA, 1995) and the Environmental Conservation Rules (ECR, 2023).

According to Rule 5 of ECR, 2023 proposed developments within Bangladesh are classified as one of four categories, as follows:

- (i) Green;
- (ii) Yellow;
- (iii) Orange; and
- (iv) Red.

The category of a project determines the procedure for issuance of an Environmental Clearance Certificate (ECC). All proposed industrial units and projects that are considered to be low polluting are classified under "Green" and shall be granted Environmental Clearance. For proposed industrial units and projects classified under the Yellow, Orange and Red Categories, a Location Clearance Certificate (LCC) and a subsequent ECC are required from the DOE depending on geographical location of project, extent of project activities and possible pollution load, human health and possible adverse impacts on environment. A detailed description of the approval process for the four categories of industry/projects are documented in Rules 9 – 19 of ECR, 2023.

Key milestones in the approvals process are outlined in **Figure 4**. These comprise:

- (i) **Location Clearance Certificate:** An LCC will be issued by DOE upon approval of all requirements, including compliance with the site selection requirements as minimum for Yellow category projects. In addition to this compliance with site selection requirements, IEE study is required for Orange category projects and EIA study for Red category projects; and
- (ii) **Environmental Clearance Certificate:** The ECC will be issued by DOE upon approval of requirements. ECC is issued to Green category project upon approval of the General Description of project; and to Yellow, Orange and Red category projects after issuance of LCC.

### 4. Procedure for Obtaining Location Clearance Certificate and Environmental Clearance Certificate

The environmental assessment process consists of three stages: screening, IEE, and detailed EIA per ECR, 2023. The ECR also contains the procedures for obtaining the LCC and ECC from the DOE for different categories of proposed industrial units or projects. Any person or organization wishing to establish an industrial unit or project must obtain an LCC and ECC from the Director General of DOE. The application for such certificate must be in the prescribed forms provided together with the prescribed fees laid down in Schedule 6 and Schedule 7, through the deposit of a Treasury *Chalan* in favor of the Director General of DOE. The procedure of getting the SC and ECC of four categories of project are briefly described as follows and the process flow outlined in Figure below.

- (i) **Green:** Projects categorized as Green projects are listed in Schedule 1. The proponent has to submit an application in a prescribed format Form 3: Location Clearance / Environmental Clearance Certificate Application, Rule 9 Sub-Rule (1),

Rule 10 Sub-Rule (1), Rule 11 Sub-Rule (1), Rule 12 Sub-Rule (1), Rule 14 Sub-Rule (1), and Rule 23 Sub-Rule (4) along with specified documents;

In addition, as per Schedule 9: Industry or Project Site Selection Guideline, Rule 8 Sub-Rule (kha), Rule 9 Sub-Rule (2), Rule 10 Sub-Rule (2), Rule 12 Sub-Rule (2), and Rule 14 Sub-Rule (2) must be followed by the proponent; and

The Client must Deposit/Pay the mentioned amount of fees to DOE per Schedule 7: Location Clearance or Environmental Clearance Certificate Received and its Renewal Fee; Rule 9 Sub-Rule (3), Rule 10 Sub-Rule (3), Rule 12 Sub-Rule (6), Rule 84 Sub-Rule (3), Rule 21 Sub-Rule (14), Rule 22 Sub-Rule (1), and Rule 23 Sub-Rule (4).

DOE will provide the ECC to the applicant within seven (7) days of application subject to their site investigation and satisfaction on the submitted documents. The ECC needs to be renewed every 5 years.

- (ii) **Yellow:** Projects categorized as Yellow are listed in Schedule 1. The proponent has to submit an application in a prescribed format Form 3: Location Clearance / Environmental Clearance Certificate Application, Rule 9 Sub-Rule (1), Rule 10 Sub-Rule (1), Rule 11 Sub-Rule (1), Rule 12 Sub-Rule (1), Rule 14 Sub-Rule (1), and Rule 23 Sub-Rule (4) along with specified documents;

Deposit/pay the mentioned amount of application processing fee to DOE per Schedule 6: Location Clearance or Environmental Clearance Certificate Application Process Fee, Rule 10 Sub-Rule (2), Rule 12 Sub-Rule (2), Rule 14 Sub-Rule (2), and related documents and detail information per Schedule 9: Industry or Project Site Selection Guideline, which shall be followed;

The relevant DOE office will conduct a site visit to the project and prepare a report with justification and opinion. Within 8 working days of receiving the application, the concerned DOE office will notify the applicant to pay the fee specified in Schedule-7, provided the information in the application is satisfactory and the on-site inspection is completed;

The Client must Deposit/Pay the mentioned amount of location clearance fee to DOE per Schedule 7: Location Clearance or Environmental Clearance Certificate Received and its Renewal Fee; Rule 9 Sub-Rule (3), Rule 10 Sub-Rule (3), Rule 12 Sub-Rule (6), Rule 84 Sub-Rule (3), Rule 21 Sub-Rule (14), Rule 22 Sub-Rule (1), and Rule 23 Sub-Rule (4); and

After issuance of LCC, the Client submits its application for issuance of ECC to DOE. DOE will provide the ECC to the applicant within seven (7) days of application subject to their site investigation and satisfaction on the submitted documents. The ECC needs to be renewed every 2 years.

- (iii) **Orange:** Projects categorized as Orange require proponents to submit an application in a prescribed format Form 3: Location Clearance / Environmental Clearance Certificate Application for Location Clearance, along with Deposit /Payment of the mentioned amount of fees for the project to DOE per Schedule 6, submission of related documents and detailed information, an Initial Environmental

Examination (IEE) Study report, and compliance with Schedule 9: Industry or Project Site Selection Guideline. After approval from the Authority, the Client must Deposit/Pay the mentioned amount of fees for the project to DOE per Schedule 7 for obtaining the Location Clearance for the project.

The relevant DOE office will visit the project site and prepare a report. This report, along with the application, will be sent to the appropriate ECC committee based on the project's serial number listed in Schedule 1. The ECC committee will review the application and the report and make a decision. The applicant will then be notified to pay the fee listed in Schedule 7 for the LCC issuance;

Within 21 days from payment of fees per Schedule 7, DOE issues the LCC. Upon obtaining the LCC, the Proponent/Client will apply for an ECC from the DOE. The DOE office will then perform a site visit to ensure LCC compliance and review relevant issues. A report justifying the issuance or rejection of the ECC will be prepared and forwarded, along with the application, to the appropriate ECC committee. The committee will make a decision within 20 working days of the application date and issue the ECC. If an initial environmental examination of an Orange Category project reveals significant pollution impacts, the ECC Committee may recommend an Environmental Impact Assessment (EIA). With approval from the Director General, the proponent must conduct the EIA. The ECC needs to be renewed every year.

- (iv) **Red:** Projects categorized as Red Projects require proponents to submit an application in a prescribed format Form 3: Location Clearance / Environmental Clearance Certificate Application for Location Clearance, along with Deposit /Payment of the mentioned amount of fees for the project to DOE per Schedule 6, related documents, detail information, draft Terms of Reference (ToR) of Environmental Impact Assessment (EIA) and compliance with Schedule 9: Industry or Project Site Selection Guideline;

Per Schedule 10: Environmental Impact Assessment Scope of Works Guidelines, Rule 14 Sub-Rule (3), a draft Terms of Reference (TOR) will be prepared for the conduct of an Environmental Impact Assessment and submitted to the DOE for approval;

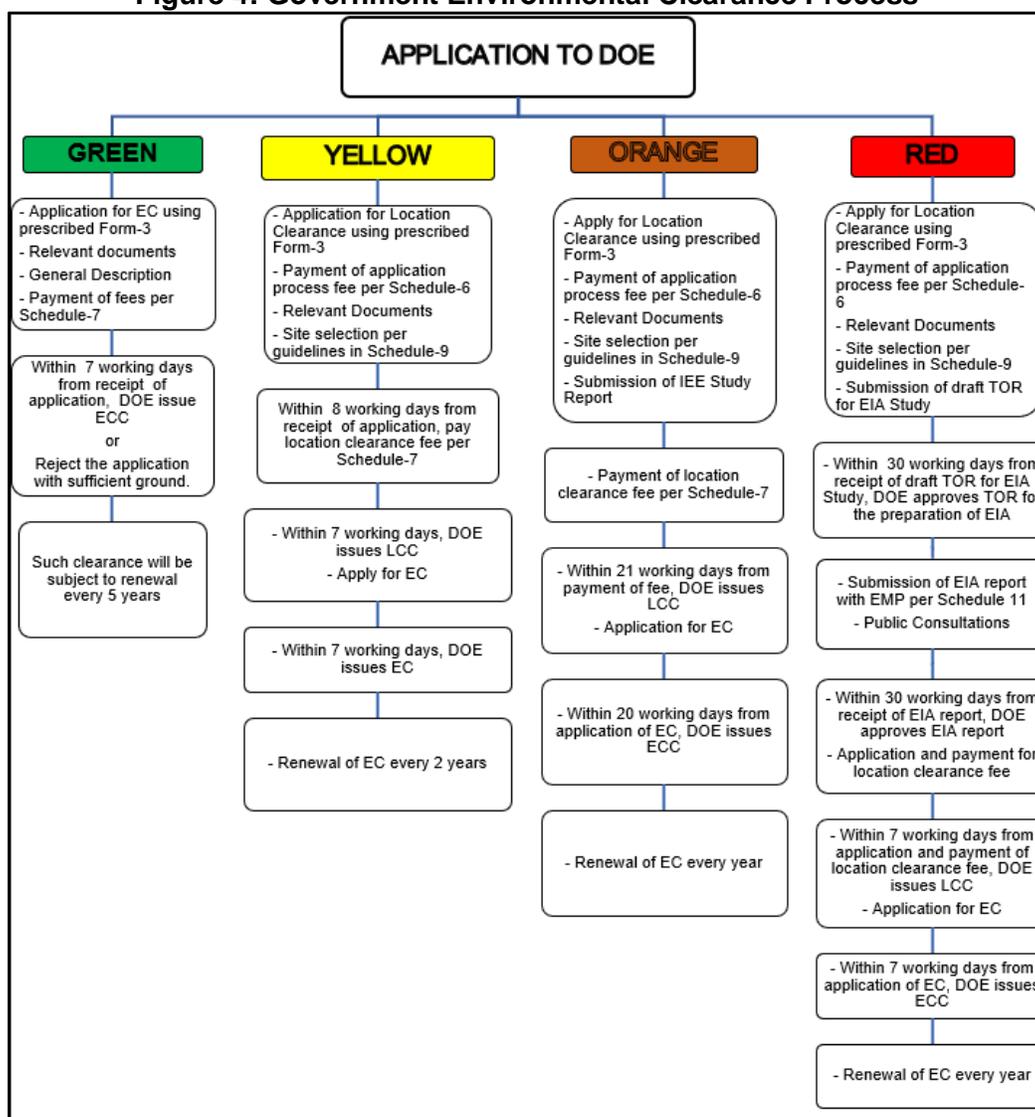
The relevant DOE office will visit the project site to review the documents and all pertinent issues. A report with justifications and findings on the rationale for issuing the location clearance certificate and draft ToR for the EIA will be forwarded to the ECC Committee. Upon receiving the documents, the ECC Committee will review and evaluate them, then submit a report to the Director General (DG) for approval. With the DG's approval, the concerned office will approve the ToR for the EIA within 30 working days;

An EIA study shall be prepared based on DOE's approved TOR. An Environmental Management Plan should be prepared as an integral part of the EIA study according to Schedule 11: Industry or Project Environmental Impact Assessment study Preparation Guidelines, and Rule 15 Sub-Rule (3). Public consultations for the EIA study shall be carried out; and

The proponent has to submit the EIA report to the ECC Committee as per Schedule 11. If the EIA is approved by the DG, the proponent has to pay the fee specified in Schedule-7 within a maximum of 7 working days and the LCC will be issued within 7 working days of submission of fee to the concerned DOE office.

After issuance of the LCC, proponent/client will submit the application for issuance of ECC. The relevant DOE office will conduct a site visit to verify the conditions of the LCC and the recommendations of the EIA etc. A report will be prepared and forwarded to the ECC committee. Upon reviewing the reports and documents, the ECC Committee will make recommendations to the DG regarding the issuance of the ECC. Once the DG approves these recommendations, the concerned office will issue the ECC within 30 working days. The ECC needs to be renewed every year.

**Figure 4: Government Environmental Clearance Process**



DOE = Department of Environment, EC = Environmental Clearance, ECC = Environmental Compliance Certificate, EIA = environmental impact assessment, EMP = environmental

management plan, IEE = initial environmental examination, LCC = Location Clearance Certificate, TOR = terms of reference.

#### D. Other Relevant National Laws

Table below provides a summary of policies, plans and strategies which deal with the drinking water supply sector, including climate change.

<b>Laws, Regulations, and Standards</b>	<b>Details</b>	<b>Relevance to the Subproject</b>
The Constitution of the People's Republic of Bangladesh	The constitution of the country was adopted in 1972, but the 15th amendment to this constitution made in 2011 included the concept of the protection and improvement of environment and biodiversity under fundamental principles of state policy (part II). To this end, Article 18A clearly states that the state shall endeavor to protect and improve the environment and to preserve and safeguard the natural resources, biodiversity, wetlands, forests and wild life for the present and future citizens. Inclusion of this clause into the constitution underscores the requirement for the protection and improvement of environment and biodiversity, and also has influenced to develop and promulgate further environmental laws, rules and directives in Bangladesh. The constitution also proclaims that the state shall adopt effective measures to remove social and economic inequality between man woman and to ensure the equitable distribution of wealth among citizens endeavor to ensure equality of opportunity and participation of women in all spheres of national life. The same also emphasizes to adopt measures for the protection against disfigurement, damage or removal of all monuments, objects or places of special artistic or historic importance or interest.	The clauses stated in the constitution clearly put directives to protection and improvement of natural environment and biodiversity, social justice and conservation of monuments, objects or places having special artistic or historical importance, during the planning, construction and O&M phases of the subproject.
Bangladesh Climate Change Strategy and Action Plan 2009	The Government of Bangladesh prepared the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) in 2008 and revised in 2009. This is a comprehensive strategy to address climate change challenges in Bangladesh. It is built around the following six themes:	This strategy and action plan is relevant to the subproject. The subproject is required to consider in its design mitigation measures that will ensure the infrastructures (e.g. quality of pipes, depth of DTWs) can withstand the impact of climate change in the future. This, in turn, will contribute to the realization of the

Laws, Regulations, and Standards	Details	Relevance to the Subproject
	<ul style="list-style-type: none"> <li>• Food security, social protection and health to ensure that the poorest and most vulnerable in society, including women and children, are protected from climate change. All programs focus on the needs of this group for food security, safe housing, employment and access to basic services, including health.</li> <li>• Comprehensive disaster management to further strengthen the country's already proven disaster management systems to deal with increasingly frequent and severe natural calamities.</li> <li>• Infrastructure to ensure that existing assets (e.g., coastal and river embankments) are well maintained and fit for purpose and that urgently needed infrastructures (cyclone shelters and urban drainage) is put in place to deal with the likely impacts of climate change.</li> <li>• Research and knowledge management to predict that the likely scale and timing of climate change impacts on different sectors of economy and socioeconomic groups; to underpin future investment strategies; and to ensure that Bangladesh is networked into the latest global thinking on climate change.</li> <li>• Mitigation and low carbon development to evolve low carbon development options and implement these as the country's economy grows over the coming decades.</li> <li>• Capacity building and Institutional strengthening to enhance the capacity government ministries, civil society and private sector to meet the challenge of climate change.</li> </ul>	objectives of the strategy and action plan.
National Water Policy 1999	The National Water Policy was promulgated in 1999 with the intention of guiding both public and private actions to ensure optimal development and management of water in order to benefit both individuals and the society at large. The policy aims to ensure progress towards fulfilling national goals of economic development, poverty alleviation, food security, public health and safety, a decent standard of living for the people and protection of the natural	Clause 4.6b of this policy states that natural depressions and water bodies in major urban areas must be preserved in order to recharge underground aquifers and rainwater management. Moreover, measures must be taken to minimize disruption to the natural aquatic environment in streams and water channels (Clause 4.9b). In addition, this policy requires each water resources development project or rehabilitation program to

Laws, Regulations, and Standards	Details	Relevance to the Subproject
	<p>environment. According to the policy, all agencies and departments entrusted with water resource management responsibilities (regulation, planning, construction, operation, and maintenance) will have to enhance environmental amenities and ensure that environmental resources are protected and restored while executing their activities. Environmental needs and objectives will be treated equally with the resources management needs. The policy has several clauses related to the protection and conservation of the natural environment to ensure sustainable development.</p>	<p>give full consideration to environmental protection, restoration and enhancement measures consistent with National Environmental Management Action Plan and the National Water Management Plan and adhere to a formal environment impact assessment process, if required by the Government (Clause 4.12a and clause 4.12b). All these elements are directly associated with the nature of the subproject. The policy also applies to the subproject due to the subproject's potential to pollute surface water bodies and groundwater during construction and operation phases. Therefore, the subproject is bound to comply with the requirements under this policy in its design.</p>
<p>National Safe Drinking Water Supply and Sanitation Policy 1998</p>	<p>The National Safe Drinking Water Supply and Sanitation Policy was adopted in 1998 and sets out the basic framework for the improvement of public health quality and to ensure an improved environment, together with a set of broad sectoral action guidelines. The policy has the following objectives:</p> <ul style="list-style-type: none"> <li>(i) To manage water supply and sanitation related basic needs for all;</li> <li>(ii) To bring about a positive change of peoples' attitude towards water and sanitation;</li> <li>(iii) To reduce the outbreak of water-borne diseases;</li> <li>(iv) To increase the efficiency of the Local Government and associated communities for handling the problems related to water supply and sanitation;</li> <li>(v) To improve sustainable water supply and sanitation system;</li> <li>(vi) To promote proper conservation, management and use of surface water and to control water pollution in light of the scarcity of groundwater; and</li> <li>(vii) To take necessary steps to capture and use rain water.</li> </ul>	<p>This policy covers the subproject as far as managing water supply is concerned. The subproject is one of the means to realize the many objectives, in particular the ones related to improving the water supply system and reducing problems related to water scarcity, etc.</p>
<p>The Forest Act (1927) and the Forest</p>	<p>The Forest Act (1927) was enacted to control trespass, illegal resources extraction from forests and to provide a</p>	<p>Although there are no forests around the subproject areas and alignments, the relevance of this Act is only on the</p>

<b>Laws, Regulations, and Standards</b>	<b>Details</b>	<b>Relevance to the Subproject</b>
(Amendment) Act (2000)	framework for the forestry revenue collection system. It is the main legislative context for forestry protection and management in Bangladesh. The Act allows for the notification of forest reserves in which the government, through the Forest Department, regulates the felling, extraction and transport of forestry produce in Bangladesh. The Act grants the government several basic powers, largely for conservation and protection of government forests, and limited powers for private forests.	potential cutting of trees in some subproject sites or alignments. The subproject will be required to obtain permits on cutting of any trees prior to start of civil works.
Bangladesh Public Procurement Rule (PPR), 2008	This rule applies to the Procurement of Goods, Works or Services by any government, semi-government or any statutory body established under any law. The rule includes the adequate measure regarding the "Safety, Security and Protection of the Environment" in the construction works. This clause includes contractor responsibility to take all reasonable steps to (i) safeguard the health and safety of all workers working on the site and other persons entitled to be on it, and to keep the site in an orderly state and (ii) protect the environment on and off the site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of the Contractors methods of operation.	NCC is a government entity that needs to comply with the environment-related requirements under this Rule, as explicitly specified herein.
National Environmental Policy, 2018	The central theme of the policy is to ensure protection and improvement in environment. The policy gives a thrust to sustainable development and long-term use of natural resources. The National Environment Policy contains policy statements and strategic options with regard to population and land-use management, management and utilization of natural resources and other socio-economic sectors, as well as the necessary arrangements for the implementation of the policy.	Subproject will have site-specific impacts and will require implementation of mitigation measures to ensure protection and improvement of the environment.
Environment Court Act, 2000 and subsequent amendments in 2003	The Environment Court Act, 2000 has been enacted in order to establish environmental courts in each administrative division of Bangladesh. This Act sets out policy for effective pursuance and completion of legal	This Act covers the subproject because design includes the provision of water treatment technology or process, from which waste may be generated and discharged to the environment.

<b>Laws, Regulations, and Standards</b>	<b>Details</b>	<b>Relevance to the Subproject</b>
	proceedings related to environmental crimes. Under this Act the Director General of the DOE has the power to impose heavy penalties to industrial polluters who are dumping untreated wastewater into the environment or not operating their legally mandated effluent treatment plants.	Therefore, the operation phase of the subproject may have the potential to release untreated wastewater into the environment. According to this Act, government can take legal actions if any environmental problem occurs due to the subproject operations.
National Water Act 2013 National Water Rules 2018	Ensures Bangladesh water sources are free from any type of pollution. Pollution from water in urban outfalls and reservoirs, e.g., lakes, canals, ponds and ditches may result in amenity losses, fisheries depletion, health problems and fish and aquatic species contamination.	The subproject is required to implement measures to ensure that water source pollution is avoided, in particular to the Shitalakhya river.
Wetland Protection Act 2000	Advocates protection against degradation and resuscitation of natural waterbodies such as lakes, ponds, beels, khals, tanks, etc. affected by man-made interventions or other causes. Prevents the filling of publicly owned water bodies and depressions in urban areas for preservation of the natural aquifers and environment. Prevents unplanned construction on riverbanks and indiscriminate clearance of vegetation on newly accreted land.	The subproject is required to implement measures to ensure that water bodies around the subproject sites are not impacted.
National Land Use Policy, 2001	Sets out guidelines for improved land-use and zoning regulations. The main objective of this policy is to ensure criteria-based uses of land and to provide guidelines for usage of land for the purpose of agriculture, housing, afforestation, commercial and industrial establishments, rail and highway and for tea and rubber gardens.	Siting of subproject components need to comply with land use and zoning regulations
Bangladesh Labor Law, 2006	It is a comprehensive law covering labor issues such as: conditions of service and employment, youth employment, benefits including maternal benefits, compensation for injuries, trade unions and industrial relations, disputes, participation of workers in company's profits, regulation of safety of dock workers, penalty procedures, administration and inspection. This Act pertains to the occupational rights and safety of factory workers and the provision of a comfortable environment for working. It also includes rules on registration of laborers,	Subproject needs to comply with the provisions on employment standards, occupational health and safety, welfare and social protection, labor relations and social dialogue, and enforcement; including prohibition of employment of children and adolescents.

Laws, Regulations, and Standards	Details	Relevance to the Subproject
	misconduct rules, income and benefits, health and fire safety, factory plan	
Bangladesh Labor Rules, 2015	Includes rules on registration of laborers, misconduct rules, income and benefits, health and fire safety, factory plan	Contractor to implement occupational health and safety measures  Contractor will be liable for compensation for work-related injuries
The Pourashava Act 2009 / Ordinance issued for the amendment of local government (municipality) ordinance, 2009 and 2010; The Pourashava Ordinance, 1977; Municipal Administration Ordinance, 1960	Provides guidance for subproject integrated community and workers health and hygiene at the construction and operation and maintenance stages of the project.	Mandated coordination with pourashava committees on disaster management measures, water and sanitation and waste management.
Building Construction (Amendment) Act and Building Construction Rules, Bangladesh National Building Code	Regulates technical details of building construction and to maintain standards of building construction	Subproject designs for any building structures need to comply with the Act and Rules.
Air Pollution Control Rules, 2022	APCR, 2022 contains air quality standards based on WHO Guidelines (Interim Goals); emissions limits and technical specifications for key sectors; mandates and coordination mechanisms among relevant line ministries to control both household and outdoor air pollution. The rules elevated the air quality management dialogue and leadership beyond the environment sector, by establishing the National Committee on Air Pollution Control, a multi-sector decision-making body presided by the Cabinet Secretary to coordinate the APCR implementation and instruct relevant agencies on specific interventions to comply with the new rules.	Subproject construction activities will potentially generate air pollution (dust and smoke emissions), and thus need to comply with the emission standards specified in the Rules.
Noise Pollution (Control) Rules, 2006	The Noise Pollution Rules, 2006 addresses that the sound levels to be no more than 50dB in Silent Zones <sup>a</sup> during daytime (6 am to 9 pm) and 40 dB at night-time (9 pm to 6 am). In residential	Subproject activities, particularly the linear works, will be in various locations of NCC with different land uses. Thus, the subproject needs to

Laws, Regulations, and Standards	Details	Relevance to the Subproject
	areas these levels are 55 dB and 45 dB, in mixed area <sup>b</sup> 60 dB and 50 dB, in commercial and industrial areas 70 dB and 60 dB and in industrial areas 75 dB and 70 dB for daytime and night-time respectively.	comply with the corresponding noise level standards at all sites.

## 1. Legislation Relating to Occupational Health and Safety

The relevance of occupational health and safety are presented in the below Table.

**Table 4: Relevance of Occupational Health and Safety Legislation**

Title of Laws and Rules	Relevance
Social Security under the Act, 1923 and an amendment in 1980	According to the Act social impact assessment includes the processes of analyzing, monitoring and managing the intended and unintended social consequences, both positive and negative of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions.
Bangladesh Labor Law of 2006	<ul style="list-style-type: none"> <li>- Compliance to the provisions on employment standards, occupational safety and health, welfare and social protection, labor relations and social dialogue, and enforcement</li> <li>- Prohibition of employment of children and adolescent.</li> </ul>
The Employer's Liability Act, 1938	The Act declares that the doctrine of common employment and of assumed risk shall not be raised as a defense in suits for damages in respect of employment injuries. Under the Maternity Benefit Act, 1939, the Maternity Benefit Act, 1950, the Mines Maternity Benefit Act, 1941, and finally the rules framed thereunder, female employees are entitled to various benefits for maternity, but in practice they enjoy leave of 6 weeks before and 6 weeks after delivery.
Public Health (Emergency Provisions) Ordinance, 1994	The ordinance calls for special provisions with regard to public health. Whereas if an emergency has arisen, it is necessary to make special provision for preventing the spread of human disease, safeguarding public health and providing them adequate medical service and other services essential to the health of respective community and workers in particular during the construction related work.
The Employees State Insurance Act, 1948	It has to be noted that health, injury and sickness benefit should be paid to people, particularly respective workers at work place under the Act.
Bangladesh Factory Act, 1979	The Act requires every workplace including small or large scale construction where women are employed to have an arrangement of childcare services. Based on this Act and Labor Laws - medical facilities, first aid and accident and emergency arrangements are to be provided by the authority to the workers at workplaces.
Water Supply and Sewerage Authority Act, 1996	The Act specify WASA's responsibility to develop and manage water supply and sewerage systems for the public health and environmental conservation.

## E. Relevant International Conventions, Treaties

Relevant International Conventions, Treaties and Protocols are given in the following Table.

**Table 5: International Environmental Conventions Relevant to the Subproject Activities**

Sl. No.	International Treaties	Ratified/ Accessed (AC)/ Accepted (AT)/ Adaptation (AD)	Relevance
1	International Plant Protection Convention (Rome, 1951) & Plant Protection Agreement for SE Asia and Pacific (1999 Revision)	01.09.1978 04.12.1974 (AC)	Ensures that component work or construction materials do not introduce plant pests.
2	Convention on Wetlands of International Importance, 1971 (Ramsar Convention)	20.04.1992 (ratified)	Protection of significant wetland and prevention of draining or filling during construction.
3	Convention Concerning the Protection of World Cultural and Natural Heritage (Paris, 1972)	03.11.1983 (ratified)	Prevention of damage or destruction of culturally and/or historically significant sites, monuments, etc.
4	Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal 1987)	02.08.90 31.10.90 (AC) (entry into force)	Use of equipment or facilities (e.g., refrigeration and air-conditioning units) that utilize ozone friendly chemicals or substances.
5	Convention on Biological Diversity, 1992 (Rio de Janeiro)	03.05.1994	Protection of biodiversity during construction and operation.
6	Cartagena protocol on Biosafety to the Convention on Biological Diversity	In the process of Ratification	Protection of biodiversity during construction and operation.
7	Convention on Persistent Organic Pollutants, 2001	In process	Restriction of use of pesticides and herbicides.
8	United Nations Framework Convention on Climate Change, 1997	22.10.2001 13.11.2003 (amended)	Reduce greenhouse gas concentrations in the atmosphere to a level that would prevent dangerous anthropogenic interference with the climate system.

### C. Gaps in Legal and Guiding Instruments

Comparative analysis of Environmental Safeguard principles is shown in the following Table.

**Table 6: Comparative Analysis of Environmental Safeguard Policy**

Sl. No.	ADB SPS, 2009		GOB Principles	Gaps (if any)
	Principles	Delivery Process		
1	Use of screening process to determine the appropriate environmental assessment	Uses sector-specific rapid environmental assessment checklist for screening and assigns categories based on potential impacts: A- EIA required (irreversible, diverse or unprecedented adverse environmental impacts); B- IEE required; C- No environmental assessment required but a review of environmental implications; FI - ESMS required.	ECA 1995 and ECR 2023 set screening criteria to classify industries/ projects based on potential environmental impacts as follows: Green, Yellow, Orange and Red (cause significant environmental impacts). The screening criteria is based on the project or industry type and do not consider the scale and location. The category determines the level of environmental assessment.	No major gaps
2	Conduct an environmental assessment	EIA and IEE - Identify potential impacts on physical, biological and socioeconomic aspects in the context of project's area of influence (i.e., primary project site and associated facilities) ESMS for FIs	Industry/project category Green- no environmental assessment required. Yellow – compliance with site selection criteria. Orange – compliance with site selection criteria and conduct of IEE required; Red – compliance with site selection criteria, and both IEE and EIA required.	No major gaps
3	Examine alternatives	Analyze alternatives to the project's location, design, and technology Document rationale for selecting the particular project location, design, and technology Consider "no project" alternative	Regulations (i.e., ECA 1995 and ECR 2023) do not require specifically the identification and analysis of alternatives	Not required by law but the ToR for EIA to be approved by the DOE now includes a discussion on analysis of alternatives.
4	Prepare an environmental management plan (EMP)	EMP to include monitoring, budget and implementation arrangements.	EMP and procedures for monitoring included in the IEE and EIA (i.e., Yellow, Orange, and Red category projects)	No major gaps
5	Carry out meaningful Consultation	Starts early and continue during implementation; Undertaken in an atmosphere of free intimidation Gender inclusive and responsive tailored to the needs of vulnerable groups Allows for the incorporation of all relevant views of stakeholders	For projects classified under Red Category, public consultation is required based on ECR 2023 Grievance redress mechanism is not mentioned in ECA 1995 and ECR 2023; EIA format required by DOE includes stakeholders' consultation.	Approval of the ToR of EIA by DOE includes mandatory consultation with stakeholders.

Sl. No.	ADB SPS, 2009		GOB Principles	Gaps (if any)
	Principles	Delivery Process		
		Establish a grievance redress mechanism		
6	Timely disclosure of draft environmental assessment (including the EMP)	Draft EIA report posted on ADB website at least 120 days prior to Board consideration; Draft EA/EARF prior to appraisal Final or updated EIA/IEE upon receipt Environmental monitoring report submitted by borrowers upon receipt.	No requirement for public disclosure of environmental reports but DOE posts the minutes of the meeting on the application for environmental clearance certificate to its website, <a href="http://www.doebd.org/minutes.php">http://www.doebd.org/minutes.php</a>	Still no requirement for public disclosure of environmental assessment
7	Implement EMP and monitor effectiveness	Prepare monitoring reports on the progress of EMP Retain qualified and experienced external experts or NGOs to verify monitoring information for Category A projects Prepare and implement corrective action plan if noncompliance is identified Requires submission of quarterly, semi-annual, and annual reports to ADB for review	For project classified under Orange and Red Categories, ECC is subject to annual renewal based on compliance of the conditions set by DOE .	No major gaps
8	Avoid areas of critical habitats (use of precautionary approach to the use, development and management of renewable natural resources)	Provides guidance on critical habitats.	ECA 1995 and ECR 2023 identifies ecologically-critical areas and the rules to protect them.	No major gaps
9	Use pollution prevention and control technologies and practices consistent with international good practices	Refers to World Bank's Environmental Health and Safety (EHS) General Guidelines 2007 (or any update) If national regulations differ, more stringent will be followed. If less stringent levels are appropriate in view of specific project circumstances, provide full and detailed justification	Effluent standards, ambient and emission standards included in ECA 1995 and ECR 2023. Ambient noise levels included in Noise Pollution Control Rules 2006.	No major gaps

Sl. No.	ADB SPS, 2009		GOB Principles	Gaps (if any)
	Principles	Delivery Process		
10	Provide workers with safe and healthy working conditions	Refers to WB EHS General Guidelines 2007 (or any update).	Occupational health and safety standards included in the Factories Act 1965, the Bangladesh Labour Act 2006, and its 2013 amendment.	No major gaps
11	Conserve physical cultural resources (PCR) and avoid destroying or damaging them	Use of field-based surveys and experts in the assessment. Consult affected communities on PCR findings Use chance find procedures for Guidance.	Preservation and protection of cultural resources are within the Antiquities Act 1968.	No major gaps

#### D. Applicable Environmental Standards

ECR, 2023 also provides the environmental standards applicable to the subproject. The ECR presents the national standards as presented in this chapter. Following requirements of ADB SPS, the subproject shall apply pollution prevention and control technologies and practices consistent with international good practice, as reflected in EHS Guidelines. When the government regulations differ from these levels and measures, the subproject shall achieve whichever is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, NCC through PMU will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented in ADB SPS. The tables below show the comparison of the national standards and internationally recognized standards, including the applicable standards to be followed under the subproject per ADB SPS requirements.

**Table 7: Bangladesh National Drinking Water Quality Standards**

Sl No	Parameter	Unit	Standard
1.	1,1 Dichloroethane (1,1 C <sub>2</sub> H <sub>4</sub> C <sub>12</sub> )	mg/l	0.030
2.	1,2 Dichloroethane (1,2 C <sub>2</sub> H <sub>4</sub> C <sub>12</sub> )	mg/l	0.030
3.	2,4,6 Trichlorophenol	mg/l	0.200
4.	Aldrin/Dieldrin	mg/l	0.030
5.	Aluminium (Al)	mg/l	0.200
6.	Ammonia (NH <sub>3</sub> )	mg/l	1.500
7.	Anionic Detergents	mg/l	0.200
8.	Arsenic (As)	mg/l	0.050
9.	Barium (Ba)	mg/l	0.700
10.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µS/cm	0.010
11.	Boron (B)	mg/l	1.000
12.	Cadmium (Cd)	mg/l	0.003
13.	Calcium (Ca)	mg/l	75.000
14.	Carbon Tetra Chloride (CCl <sub>4</sub> )	mg/l	0.005
15.	Chloride	mg/l	250.000*

SI No	Parameter	Unit	Standard
16.	Chloroform (CHCl <sub>3</sub> )	mg/l	0.090
17.	Color	Hazen Unit	15.000
18.	Copper (Cu)	mg/l	1.500
19.	Cyanide (CN)	mg/l	0.050
20.	Fecal Coliform	NFU/100ml	0
21.	Fluoride (F <sup>-</sup> )	mg/l	1.000
22.	Free Residual Chlorine	mg/l	0.20
23.	Hardness as CaCO <sub>3</sub>	mg/l	500.000
24.	Iron (Fe)	mg/l	0.3-1.0
25.	Lead (Pb)	mg/l	0.010
26.	Magnesium (Mg)	mg/l	30-35
27.	Manganese (Mn)	mg/l	0.400
28.	Mercury (Hg)	mg/l	0.001
29.	Nickel (Ni)	mg/l	0.050
30.	Nitrate (NO <sub>3</sub> <sup>-</sup> )	mg/l	45
31.	Nitrite (NO <sub>2</sub> <sup>-</sup> )	mg/l	1.000
32.	Odor	---	Odorless
33.	Oil and Grease	mg/l	0.010
34.	Overall Beta variance	BQU/L	1.000
35.	Pentachlorophenol	mg/l	0.009
36.	pH	---	6.5-8.5
37.	Phenols	mg/l	0.002
38.	Potassium	mg/l	12.000
39.	Radioactive Materials Emitting Alpha Radiation	BQU/L	0.100
40.	Selenium (Se)	mg/l	0.010
41.	Silver (Ag)	mg/l	0.020
42.	Sodium (Na)	mg/l	200.000
43.	Sulfate (SO <sub>4</sub> <sup>-2</sup> )	mg/l	250.000
44.	Sulfide as H <sub>2</sub> S	mg/l	0.050
45.	Suspended Solid (SS)	mg/l	10.000
46.	Temperature	°C	20-30
47.	Tetrachloroethane (C <sub>2</sub> H <sub>4</sub> C <sub>14</sub> )	mg/l	0.040
48.	Tin (Sn)	mg/l	2.000
49.	Total Chromium (Total Cr)	mg/l	0.050
50.	Total Coliform	NFU/100ml	0
51.	Total Dissolved Solids (TDS)	mg/l	1000.000
52.	Total Kjeldal Nitrogen	mg/l	1.000
53.	Trichloroethane (C <sub>2</sub> H <sub>3</sub> C <sub>13</sub> )	mg/l	0.020
54.	Turbidity	NTU	5.000
55.	Zinc (Zn)	mg/l	5.000

\* 1,000 mg/l in coastal areas

Source: ECR, 2023

**Table 8: Bangladesh Inland Surface Water Standards**

Best Practice Based classification	pH	DO mg/l	BOD mg/l	NO <sub>3</sub> -N mg/l	NH <sub>4</sub> -N mg/l	PO <sub>4</sub> -P mg/l	Total Cr mg/l	Pb mg/l	Hg mg/l	Total Coliform cfu/100mg	TDS mg/l	COD mg/l
a. Source of drinking water for supply only after disinfecting:	6.5-8.5	≥6	≤2	7.0	0.1	0.1	0.02	0.03	0.001	≤100	1000	10
b. Water usable for recreational activity	6.5-8.5	≥5	≤3	7.0	0.3	0.5	0.2	0.05	0.001	≤50	1000	10
c. Source of drinking water for supply after conventional treatment	6-9	≥5	≤3	7.0	0.3	0.5	0.02	0.03	0.001	≤5000	1000	25
d. Water usable by fisheries	6-9	≥5	≤6	7.0	0.3	0.5	0.05	0.1	0.004	≤5000	1000	50
e. Water usable by various process and cooling industries	6.5-8.5	≥1	12	-	2.7	-	0.1	0.1	0.05	-	1000	100
f. Water usable for irrigation	6.5-8.5	-	≤12	5.0	1.5	2.0	0.1	0.1	0.002	≤50000	1000	100

**Note:** Electrical conductivity for irrigation water 2250 -μS/cm (at a temperature of 25°C); Sodium less than 26%; boron less than 0.2%.

Source: ECR, 2023

**Table 9: Applicable Ambient Air Quality Standards for Bangladesh Projects**

Parameter	Bangladesh Ambient Air Quality Standard ( $\mu\text{g}/\text{m}^3$ ) <sup>a</sup>	WHO Air Quality Guidelines ( $\mu\text{g}/\text{m}^3$ )	
		Global Update <sup>b</sup> 2021	
PM <sub>10</sub>	50 (1-year) 150 (24-h)	15 (1-year) 45 (24-h)	
PM <sub>2.5</sub>	35 (1-year) 65 (24-h)	5 (1-year) 15 (24-h)	
SO <sub>2</sub>	80 (24-hr) 250 (1-hr)	40 (24-h)	
NO <sub>x</sub>	40 (1-year) 80 (24-hr)	10 (1-year) 25 (24-h)	
CO	10,000 (8-h) 40,000 (1-h)	4 (24-h)	
Lead	0.25 (1-year) 0.50 (24-hr)		
Ozone (O <sub>3</sub> )	180 (1-h) 100 (8-h)	60 (peak season) 100 (8-h)	
NH <sub>3</sub>	100 (1-year) 400 (24-h)		

ADB = Asian Development Bank, CO = carbon oxide, h = hour,  $\mu\text{g}/\text{m}^3$  = microgram per cubic meter, min = minute, NO<sub>x</sub> = oxides of nitrogen, PM<sub>2.5</sub> = particulate matter 2.5, PM<sub>10</sub> = particulate matter 10, SO<sub>2</sub> = sulfur dioxide, TSP = total suspended particle, WHO = World Health Organization.

<sup>a</sup> Air Pollution Control Rules 2022

<sup>b</sup> Recommended 2021 WHO Global Air Quality Guidelines. <https://www.who.int/>

**Table 10: Applicable Noise Levels for Bangladesh Projects**

Receptor/ Source	National Noise Standard Guidelines <sup>a</sup> (dB)		WHO Guidelines Value For Noise Levels Measured Out of Doors <sup>b</sup> (One Hour LA <sub>q</sub> in dBA)	
	Day (06:00-21:00)	Night (21:00-6:00)	07:00 – 22:00	22:00 – 07:00
	Industrial area	75	70	70
Commercial area	70	60	70	70
Mixed Area	60	50	55	45
Residential Area	55	45	55	45
Silent Zone <sup>c</sup>	50	40	55	45

<sup>a</sup> Noise Pollution Control Rules 2006

<sup>b</sup> WHO. 1999. Guidelines for Community Noise; World Bank Group. 2007. Environmental, Health and Safety General Guidelines. Washington, D.C.

<sup>c</sup> Area up to a radius of 100 meters around hospitals or educational institutions or special institutions/establishments identified/to be identified by the Government is designated as Silent Zones where use of horns of vehicles or other audio signals, and loudspeakers are prohibited.

**Table 11: Applicable Effluent Discharge Standards**

Sl. No	Parameter	Unit	Maximum Tolerable Limit at Discharge point except pH		
			Internal Surface Water	2 <sup>nd</sup> Stage process of public sewage	Coastal Areas
1.	Nitrogen (N)	mg/l	50	50	50
2.	Ammonia (NH <sub>3</sub> )	mg/l	5	5	5

Sl. No	Parameter	Unit	Maximum Tolerable Limit at Discharge point except pH		
			Internal Surface Water	2 <sup>nd</sup> Stage process of public sewage	Coastal Areas
3.	Arsenic (As)	mg/l	0.2	0.2	0.2
4.	BOD <sub>5</sub> at 20°C	mg/l	30	250	100
5.	Boron (B)	mg/l	2	2	4
6.	Cadmium (Cd)	mg/l	2	1	2
7.	Chlorine (Cl <sup>-</sup> )	mg/l	600	600	---
8.	Total Chromium	mg/l	0.5	1	1
9.	COD	mg/l	200	400	250
10.	Hexavalent Cr	mg/l	0.1	2	1
11.	Copper (Cu)	mg/l	3	3	3
12.	Fluoride (F)	mg/l	2	15	15
13.	Sulphide (S)	mg/l	1	--	5
14.	Iron (Fe)	mg/l	3	3	3
15.	Total Kjeldal nitrogen	mg/l	100	--	100
16.	Lead (Pb)	mg/l	0.1	1	2
17.	Manganese (Mn)	mg/l	2	2	2
18.	Mercury (Hg)	mg/l	0.01	0.01	0.01
19.	Nickel (Ni)	mg/l	1	2	5
20.	Nitrite (N)	mg/l	10	--	20
21.	Oil & Grease	mg/l	10	20	20
22.	Phenol (C <sub>6</sub> H <sub>5</sub> OH)	mg/l	1	5	5
23.	Phosphorus (P)	mg/l	5	--	--
24.	Radioactive Material a) Alpha Particle b) Beta Particle	Micro Curie/L	Standard Set by Bangladesh Atomic Energy Commission	---	----
25.	pH	---	6-9	6-9	6-9
26.	Selenium (Se)	mg/l	0.05	0.05	0.05
27.	Zinc (Zn)	mg/l	5	15	15
28.	Temperature	°C	Not more than 5°C of reservoir water temperature	--	Not more than 5°C of reservoir water temperature
29.	Suspended Solids	mg/l	100	500	100
30.	Cyanide	mg/l	0.1	2.0	0.2
31.	Total Residual Chlorine	mg/l	1.0	--	1.2
32.	Bio Assay Test		90% fishes remain alive after 96 hours in the treated liquid waste	90% fishes remain alive after 96 hours in the treated liquid waste	90% fishes remain alive after 96 hours in the treated liquid waste

Source: ECR, 2023

## V. ENVIRONMENTAL ASSESSMENT FOR WATER ATM

This section provides the general steps of environmental assessment for the Water ATMs that will be funded under the project. In this section, assessment procedures are discussed, in

accordance with the requirements of ADB SPS and the environmental assessment and clearance procedures of the government.

## **A. Environmental Assessment**

The project must comply with ADB SPS and relevant national laws and regulations (Chapter IV). Therefore, each future Water ATM needs to undergo environmental assessment process and obtain the necessary permits and clearances from the government. The steps to be followed are shown in Table 12.

Environmental assessment process must be properly documented. In this case, IEE report shall be prepared to reflect the details of environmental assessment done on the Water ATMs. The IEE report shall include environmental management plan (EMP) which describes and addresses the potential impacts and risks identified by the environmental assessment. The EMP shall include proposed mitigation measures, environmental monitoring and reporting requirements, emergency response procedures, related institutional or organizational arrangements, capacity development and training measures, implementation schedule, cost estimates, and performance indicators. The basic outline for an IEE report is presented in Appendix 2.

The selection of sites for each of the 27 proposed Water ATMs may be finalized at varying dates, and therefore the construction phases for these will also happen at varying periods as well. As the first batch of sites is identified (i.e. one or more sites) for these Water ATMs, a corresponding IEE report that contains an EMP will be prepared, with a stipulation that such IEE report shall be updated as other new sites are identified moving forward, to include results of assessment for these new sites until all the 27 sites are completely identified by NCC.

The first draft of IEE report shall be included in bidding and contract documents with specific provisions requiring the contractor to (i) comply with all other conditions required by ADB,<sup>18</sup> (ii) submit a Health and Safety Plan, in accordance with the relevant government regulations and guidelines, or in the absence thereof, to international good practice guidelines such as World Health Organization, and (iii) submit a site-specific environmental management plan (SEMP), including (a) proposed sites/locations for the water ATMs, storage areas, hauling roads, lay down areas, disposal areas for solid and hazardous wastes; (b) specific mitigation measures following the approved EMP; (c) monitoring program per EMP; and (d) budget for SEMP implementation. Any subsequent updated versions of the IEE report shall be provided to the contractor and shall supersede any earlier version.

In addition to ADB SPS and government guidelines, assessment of impacts shall follow other internationally accepted guidelines such as World Bank's EHS guidelines on construction and decommissioning.<sup>19</sup>

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<sup>18</sup> Contractors to comply with (i) all applicable labor laws and core labor standards on (a) prohibition of child labor as defined in national legislation for construction and maintenance activities; (b) equal pay for equal work of equal value regardless of gender, ethnicity, or caste; and (c) elimination of forced labor; and with (ii) the requirement to disseminate information on sexually transmitted diseases, including HIV/AIDS, to employees and local communities surrounding the project sites.

<sup>19</sup> IFC World Bank Group. 2007. [Environmental, Health, and Safety \(EHS\) Guidelines – General EHS Guidelines: Construction and Decommissioning](#).

**Table 12: ADB and Environmental Safeguards Procedures Per ADB SPS and Government of Bangladesh Laws**

<b>Project Stage</b>	<b>ADB</b>	<b>Government of Bangladesh</b>
Infrastructure Identification/ Categorization	Each proposed Water ATM is in line with the EARF selection criteria.	Categorization of industries and projects for those included in the various categories specified in Environmental Conservation Rules,2023 (classification of industrial units or projects, based on location and impact on environment). See Chapter IV (B) hereof.
	REA checklist is completed and environmental categorization is carried out at the earliest stage when sufficient information is available for this purpose. Any REA checklist prepared and completed by PMU shall be submitted to ADB for concurrence or clearance. REA checklist applicable to the project is attached in Appendix 3. Any site that will trigger Category A classification will not be considered under the project.	
Detailed Design and IEE Preparation	<b>Environmental Assessment.</b> Detailed design and environmental assessment shall be in line with the EARF.	For both Orange and Red category projects, application for Location Clearance Certificate as initial step.  As next step after securing Location Clearance Certificate:  For Orange projects – Submission of IEE report for the project.  For Red Category projects – Submission of TOR for the EIA; or EIA report prepared on the basis of TOR previously approved by DOE..
	<b>Public Consultation:</b> Consultation will be carried out in a manner commensurate with the impacts on affected communities. The consultation process and its results are to be documented and reflected in the environmental assessment report. <sup>a</sup>	For projects classified under Red Category, public consultation is required.
	<b>IEE and EMP Preparation.</b> Drafting of IEE and EMP follow the outline of ADB, which include the following: (i) results of baseline information gathering, (ii) assessment of environmental impacts and mitigation measures, (iii) development of an EMP, (iv) EMP implementation budget, (v) institutional arrangements, (vi) results of public consultations done and future consultation plans, (vi) GRM, (vii) capacity assessment, and (viii) monitoring and reporting arrangements, among others.	ECR does not prescribe specific outline of IEE or EMP. The project will need to satisfy all the applicable requirements for the issuance of ECC as enumerated in Form 3 attached to ECR.  Guidelines related to EIA and EMP preparation are specified in Schedule11
	<b>Disclosure:</b> Disclosure by ADB on its website the following: (i) EARF before project appraisal, and (ii) final IEE reports after securing government endorsement of the reports.	Approved EIA for Red Category projects will be uploaded on the DOE website for public disclosure, as per Rules 18 of ECR 2023.

Project Stage	ADB	Government of Bangladesh
	<p>Disclosure by government on its website or any accessible place all environmental information and documents such as IEE reports in a form or language understandable to affected people and other stakeholders. For illiterate people, other suitable communication methods will be used.</p> <p>Mitigation measures specified in the IEE study incorporated in project design.</p> <p>EMP implementation and monitoring responsibilities incorporated in the bid and contract documents.</p>	
Approval	<p>After review of IEE, executing agency will forward to ADB for review. Cleared IEE is sent back to executing agency for endorsement. Cleared and endorsed IEE is required prior to approval and issuance of tender documents and shall form part of the said tender documents.</p>	<p>Consistent with all prerequisites and timelines as specified in Chapter IV (B) hereof, DOE will approve or reject application for ECC, with the following timelines:</p> <ul style="list-style-type: none"> <li>• For green and yellow category projects, within 7 working days from receipt of the application and accompanying documents, DOE will issue ECC or reject application giving reasons for its decision. Renewal of EC for green and yellow category project is required every 5 years and 2 years, respectively.</li> </ul> <p>For orange category projects, and assuming LCC is already issued, DOE issues ECC within 20 working days from receipt of the application for ECC. DOE may reject the application giving reasons for its decision. Renewal of EC is required every year.</p> <p>For red category projects, and assuming LCC is already issued, DOE issues ECC within 7 working days from receipt of the application for ECC. DOE may reject the application giving reasons for its decision. Renewal of EC is required every year...</p>
Procurement/ Contract Award	<p>No contract award until:</p> <p>(i) Environmental clearances required by the Government have been obtained;</p> <p>(ii) IEE has been finalized, cleared by ADB, and disclosed to public;</p> <p>(iii) IEE and other safeguard requirements are included in bidding documents and civil works contracts; and</p> <p>(iv) EMP implementation is reflected in PAM.</p>	<p>ECR has no reference to procurement and contract rules.</p>

Project Stage	ADB	Government of Bangladesh
Implementation	<p>ADB supervision missions shall review effective EMP implementation.</p> <p>Executing agency will submit to ADB the following documents for disclosure on ADB's website:</p> <p>(i) updated/final IEE (if updated/finalized due to change in scope and/or detailed design);</p> <p>(ii) corrective action plan prepared during project implementation, if any; and</p> <p>(iii) semi-annual environmental monitoring reports.</p>	<p>ECC has no requirement for post ECC monitoring or reporting. However, it is incumbent upon DOE to impose such requirement. Accordingly, the ECC terms and conditions typically include the requirement for the environmental monitoring report, which is required to be submitted to the DOE periodically to renew the ECC.</p>

ADB = Asian Development Bank, DOE = Department of Environment, EARF = environmental assessment and review framework, ECC = Environmental Clearance Certificate, ECR = Environmental Conservation Rules, EIA = environmental impact assessment, EMP = environmental management plan, IEE = initial environmental examination, LCC = location clearance certificate, REA = rapid environmental assessment, TOR = terms of reference.

<sup>a</sup> ADB requires meaningful consultation, which is defined as a process that (i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle; (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) undertaken in an atmosphere free of intimidation or coercion; (iv) gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues. This is required of all projects.

## VI. CONSULTATION, INFORMATION DISCLOSURE, AND GRIEVANCE REDRESS MECHANISM

### A. Consultation

ADB SPS, 2009 requires meaningful consultation with affected people or stakeholders<sup>20</sup> that:

- (i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle;
- (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people;
- (iii) is undertaken in an atmosphere free of intimidation or coercion;
- (iv) is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and
- (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues.

As a minimum, stakeholders of each subproject will be consulted regarding the scope of the environmental study and will then be informed during environmental assessment about the likely impacts of the subproject and proposed mitigation measures. The report will record the views of stakeholders and indicate how these have been taken into account in project development. A variety of approaches for consultations include public meetings, focus group

<sup>20</sup> Stakeholders include beneficiaries and affected local people, elected representatives, community leaders, religious leaders and representatives of community-based organizations, representatives of women's groups, local NGOs, local government and relevant government agency representatives, residents, shopkeepers, business persons who live and/or work near the proposed sites, project staff and consultants, ADB, and GOB, among others.

discussions, workshops, and public information campaigns. Public consultations may include newspaper advertisement in the local and national newspapers well before the consultations giving brief project description, location, and specific contact data (including telephone numbers). In the meetings, presentations will be provided about the subproject's potential environmental and social impacts. Consultation sessions must have attendance sheets prepared and included as part of the documentation. See below for Table 13 the template.

**Table 13: Template of Attendance Sheet for Consultation Meetings**

<b>S.N.</b>	<b>Name of Attendees</b>	<b>Sex (M/F)</b>	<b>Age</b>	<b>Affiliation and Position</b>	<b>Signature</b>

Public consultation and involvement will be given highest priority in the implementation of mitigation measures. Public consultation will take place, and on the basis of decision of the consultation meeting, implementation of mitigation measures will be prioritized and will be carried out with the involvement of the local people.

## **B. Information Disclosure**

Information will be disclosed through public consultation and more formally by making documents and other materials available in a form and at a location in which stakeholders can easily access. This will involve making reports available at public locations within the vicinity of the sites and providing a mechanism for the receipt of comments and making documents available more widely by lodging them on the ADB and NCC/PMU websites.

NCC, through the PMU, will submit to ADB the following documents for disclosure on ADB website:

- (i) environmental assessment and review framework;
- (ii) the final IEE report for each subproject;
- (iii) new or updated IEE reports and corrective action plan prepared during project implementation, if any; and
- (iv) semi-annual environmental monitoring reports.

PMU will provide relevant environmental information, including information from the relevant documents in a timely manner, in an accessible place and in a form and language(s) understandable to affected people and other stakeholders. For illiterate people, other suitable communication methods will be used. For the benefit of the community, the summary of the IEE will be translated in the local language and made available at: (i) offices of PMU; and (ii) contractor office.

Hard copies of the IEE will be available in the PMU and contractor/s, and accessible to citizens as a means to disclose the document and at the same time creating wider public awareness. On demand, the person seeking information can obtain a hard copy of the complete IEE document at the cost of photocopy from these offices. Electronic version of the IEE reports will be placed in the official website of NCC after approval of the documents by Government and clearance from ADB. Where possible, PMU will issue notification on the disclosure mechanism in local or national newspapers, ahead of the initiation of implementation of the project, providing information on the project, as well as the start dates, etc. This will create awareness of the project implementation among the public. PMU will consider other additional means of information

disclosure depending on practicability, such as the distribution of posters to community billboards within the vicinity of the subproject sites to mass campaign the basic tenets of the IEE.

### **C. Common Grievance Redress Mechanism**

. A project-specific grievance redress mechanism (GRM) will be established to receive, evaluate, and facilitate the resolution of affected persons' concerns, complaints, and grievances about the social and environmental performance at the level of the overall project, including the subproject. The GRM will aim to provide a time-bound and transparent mechanism to voice out and resolve social and environmental concerns associated with the project.

. The common GRM will provide an accessible and trusted platform for receiving and facilitating the resolution of affected persons' grievances related to the project. The multi-tier GRM for the project is outlined below, each tier having time-bound schedules and with responsible persons identified to address grievances and seek appropriate persons' advice at each stage, as required.

. The project area-wide public awareness campaigns will ensure that knowledge of the grievance redress procedures is generated. The PMU will conduct awareness campaigns to ensure that all affected persons and vulnerable households are made aware of grievance redress procedures and entitlements.

. Affected persons will have the flexibility of conveying grievances/suggestions by dropping grievance redress/suggestion forms in complaints/suggestion boxes to be installed by PMU. Grievances can be sent by post, or by writing in a complaints register in the PMU office. The option of registering complaints on the NCC website can be explored, as this option is not available currently. Careful documentation of the name of the complainant, date of receipt of the complaint, address/contact details of the person, location of the problem area, and how the problem was resolved will be undertaken. The PMU social and environmental officers will have the overall responsibility for timely grievance redress on environmental and social safeguards issues and for registration of grievances, related disclosure, and communication with the aggrieved party. A copy of a proposed outline of a grievance registration form is given in Appendix 4. All the documents made available to the public will include information on the contact number, address and contact person for registering grievances, and will be disseminated throughout the project area by the PMU.

#### **1. Existing NCC Grievance Mechanism**

. The current methods of registering complaints include complaint registration at the Office of the Executive Engineer at Godenail Water Treatment Plant, complaint registration through the concerned elected representatives (ward councilors and the Mayor). Complaints are currently conveyed through emails, phone calls, WhatsApp messages, etc. The complaint receiving person channels the grievance to the concerned officer/department of NCC for resolution. Larger issues are resolved in consultation with the Mayor of NCC. The existing grievance redress process is currently not formalized.

#### **2. Proposed Narayananj Green and Resilient Urban Development (NGRUD) Project Grievance Mechanism**

. The existing NCC grievance redress processes will be integrated into the proposed project specific grievance redress mechanism which will be established for the project. In case of

grievances that are immediate and urgent in the perception of the complainant, the Assistant Engineer/ DBO Contractor safeguard personnel – Social and Environment / Social and Environment Officer from PMU will provide the most easily accessible or first level of contact for the quick resolution of grievances. Contact phone numbers and names of the concerned staff and DBO Contractor will be posted at all construction sites in visible locations. A representative of affected persons from each settlement will be a special invitee when grievances of a particular settlement are being discussed by the GRC.<sup>21</sup> Given below is the proposed grievance redress mechanism for the project.

- (i) **Local level:** The on-site contractors Safeguards (social and environment) Officer/ Assistant Engineer of the PMU/ Social and Environment Officer, NCC will receive and record the complaint at the subproject site. Alternatively, the complaint can be registered by phone call, message, email, or on the NCC website and this will be reverted to the onsite personnel for 1st level resolution. The complaint will be reviewed by local level GRC comprising of: (i) Deputy Project Director, NCC, who will be the Convener; other members include Social and Environment officer, NCC; (iii) Councilor- reserved seat; (iv) Councilor-concerned ward; (v) GRM Focal (Chief Social Welfare Officer) (vi) Assistant Engineer NCC (designated as member secretary) (iv) Contractors' safeguards personnel- social and environment (v) Resettlement/ Environment Specialist of the MDSC. The first level or the local level officers/ GRC will try to resolve the issue on-site in consultation with the aggrieved party. This will be done within 7 days of receipt of a complaint/ grievance;
- (ii) **Project level:** All grievances that cannot be redressed within 7 days at the local level will be brought to the notice of the Project GRC, comprising of Project Director who will be the Convener; other members include Deputy Project Director (sectoral); Social Safeguards Officer (PMU); Environment Safeguards Officer (PMU); Team Leader, MDSC (designated as member secretary) and Social and Environment Specialist, MDSC. The Project level GRC will resolve the grievance within 14 days of receipt of a complaint/ grievance; and
- (iii) **Apex level:** If the grievance is not resolved at the Project level, the grievance will be referred to the Apex level, headed by the Honorable Mayor. Chief Executive Officer will support the grievance process. Other members include the Project Director who will be the Member secretary; and NCC GRM focal officer. The grievance at this level will be resolved within 21 days of its receipt.

. Despite the project GRM, an aggrieved person shall have access to the country's legal system at any stage. This can run parallel to accessing the GRM and is not dependent on the negative outcome of the GRM.

. **ADB's Accountability Mechanism.** In the event that the established GRM is not in a position to resolve the issue, the affected person also can use the ADB Accountability Mechanism through directly contacting (in writing) the Complaint Receiving Officer at ADB headquarters or the ADB Bangladesh Resident Mission. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before

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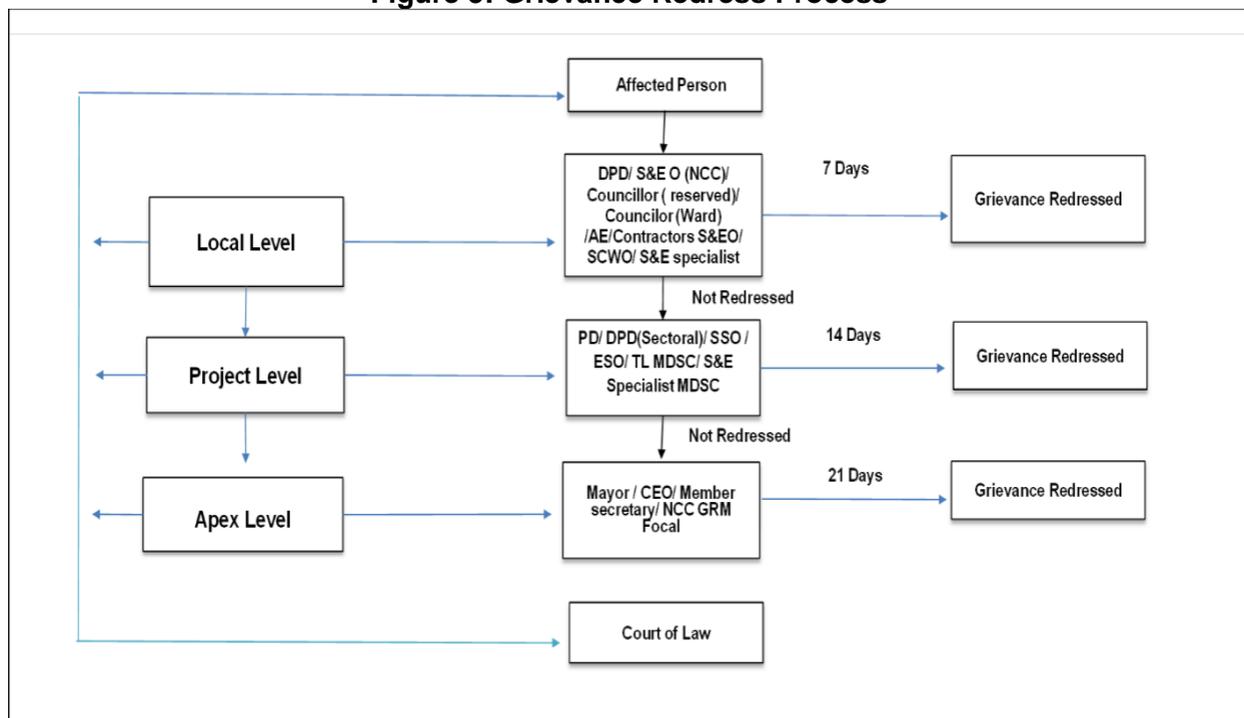
<sup>21</sup> Any travel expenses incurred by affected persons and their representatives (special invitees) to attend the GRC meetings shall be covered under the budgetary provision made for GRC.

submitting a complaint to the Accountability Mechanism, affected people should make an effort in good faith to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.<sup>22</sup>

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<sup>22</sup> <https://www.adb.org/who-we-are/accountability-mechanism/main>

**Figure 5: Grievance Redress Process**



AE= Assistant Engineer; CEO= Chief Executive Officer; CSWO= Chief Social Welfare Officer; DPD= Deputy Project Director; ESO = Environmental Safeguards Officer; GRM = Grievance Redress Mechanism; MDSC= Management Design and Supervision Consultant; NCC = Narayanganj City Corporation; PD = Project Director; S&E = social and environment; S&EO= Social and Environment Officer; SSO = Social Safeguards Officer; TL = Team Leader.

. **Record-keeping.** The PMU will keep records of grievances received, including contact details of the complainant, the date the complaint was received, the nature of the grievance, agreed corrective actions and the date these were affected and the outcome. Sample matrix for recording is in Appendix 5. The number of grievances recorded and resolved and the outcomes will be available in the PMU office, as well as reported in monitoring reports submitted to ADB on a semi-annual basis. All resolutions shall be communicated to the aggrieved party/complainant(s).

. **Periodic review and documentation of lessons learned.** The PMU will periodically review the functioning of the GRM and record information on the effectiveness of the mechanism, especially on the overall project's ability to prevent and address grievances.

. **Costs.** All costs involved in resolving the complaints (meetings, consultations, communication, and reporting/ information dissemination) will be borne by the PMU.

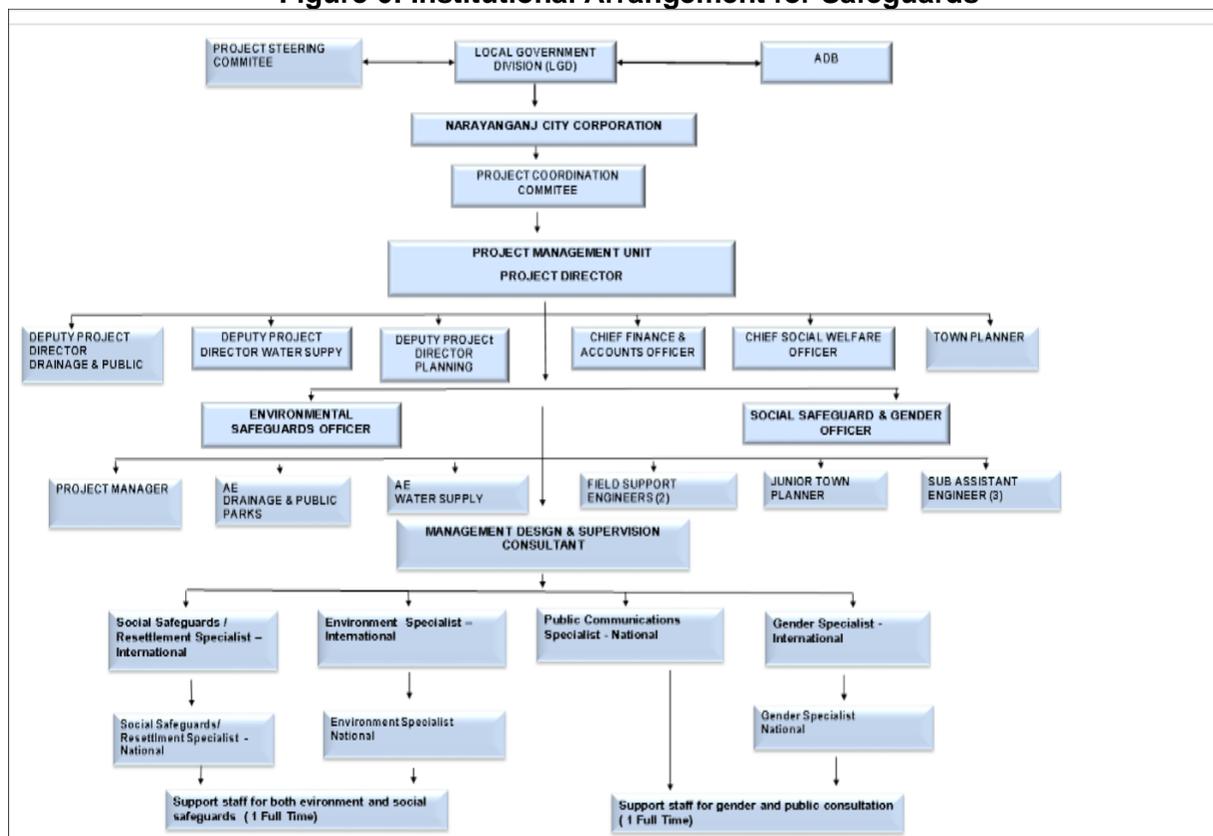
## VII. INSTITUTIONAL ARRANGEMENT AND RESPONSIBILITIES

### A. Overall Project Institutional Arrangement

. The Local Government Division (LGD) of the Ministry of Local Government, Rural Development and Cooperatives (MLGRDC) will be the executing agency and NCC will be the implementing agency for the overall project. A Project Coordination Committee (PCC) will be formed within the NCC to engage with policymakers, obtain guidance on key policy issues and oversee overall project implementation.

. A Project Management Unit (PMU) will be created under the overall supervision of PCC. The PMU will ensure that the subproject will be implemented in accordance with the ADB SPS and relevant government laws, rules and regulations, including the recently Environmental Conservation rules, 2023, among others. The PMU will be supported by a Management, Design and Supervision Consultant (MDSC) team, comprising individual consultants that will provide all necessary management and supervision expertise in implementing the overall project. The management and supervision will come at varying degrees during design phase and pre-construction phase, construction phase, and operation phase. Figure below outlines the institutional arrangement for the project in terms of safeguards supervision and implementation.

**Figure 6: Institutional Arrangement for Safeguards**



**Project Management Unit.** The PMU established within NCC, headed by a Project Director, will continue to implement the project and will be responsible for overall planning, management, coordination, supervision, and progress monitoring of the project. The PMU will be staffed with at least one (1) environmental safeguards officer who will lead the efficient overall implementation of environmental safeguards. The environmental safeguards officer will be supported by environment specialist and other consultants of MDSC in implementing and/or monitoring environmental safeguards compliance under the project, including in the conduct of capacity development and training. The responsibilities of the environmental safeguards officer are:

- (i) Ensure that IEE reports are included in the bidding and contract documents;
- (ii) Ensure availability of budget for safeguard activities in the bidding and contract documents;
- (iii) Ensure bidding and contract documents include specific provisions requiring contractors to comply with: (i) all applicable labor laws and core labor standards on (a) prohibition of child labor as defined in national legislation for construction and maintenance activities; (b) equal pay for equal work of equal value regardless of gender, ethnicity, or caste; and (c) elimination of forced labor; and with (ii) the requirement to disseminate information on sexually transmitted diseases, including HIV/AIDS, to employees and local communities surrounding the subproject site;
- (iv) Review and confirm draft IEE reports are finalized based on final detailed designs;
- (v) Ensure that no civil works shall commence until corresponding final IEE report is cleared by ADB;

- (vi) Review and provide recommendations on the approval of site-specific EMPs (SEMPs), including other required work plans, of the contractors;
- (vii) Provide oversight on environmental management aspects of the project, and ensure the EMPs, SEMP and other required work plans are implemented by the contractors;
- (viii) Establish a system to monitor environmental safeguards of the project including monitoring the indicators set out in the monitoring plan of the EMPs;
- (ix) Facilitate and confirm overall compliance with all government rules and regulations regarding site and environmental clearances as well as any other environmental requirements as relevant;
- (x) Review, monitor and evaluate effectiveness with which the EMPs and SEMP are implemented, and recommend necessary corrective actions to be taken;
- (xi) Undertake field monitoring to validate compliance with the EMPs, SEMP and other required work plans;
- (xii) With support from MDSC, consolidate monthly environmental monitoring reports from the contractors. Based on these monthly reports and on results of PMU's own field monitoring and validation activities, prepare and submit semi-annual environmental monitoring reports (SEMRs) to ADB;
- (xiii) Ensure timely disclosure of final IEE reports, SEMRs and other safeguard documents in project website and in a form accessible to the public;
- (xiv) Address any grievances brought about through the grievance redress mechanism (GRM) in a timely manner per the IEEs (GRM is discussed in Section VI hereof);
- (xv) Undertake regular review of safeguards-related loan covenants, and the compliance during project implementation; and
- (xvi) With support from MDSC, organize periodic capacity building and training programs on safeguards for project stakeholders, including PMU personnel and contractors.

**Management, Design and Supervision Consultant (MDSC).** The MDSC team will have one International Environment Specialist Consultant and one National Environment Specialist Consultant who will assist PMU in the review and updating of all necessary environmental safeguard documentation as required by ADB SPS and national laws, regulations, policies and guidelines applicable to the project; and in fulfilling all other tasks necessary to ensure the project complies with all environmental safeguard requirements. Specific tasks of the Environment Specialist Consultants are the following:

- (i) Support the PMU in fulfilling all responsibilities as enumerated in the preceding paragraph;
- (ii) Update/Finalize the initial environmental examination (IEE) report including environmental management plans (EMP) based on final detailed design of the subprojects and in accordance with ADB SPS and national laws, regulations, policies and guidelines. For the Water ATM subproject, IEE reports shall also be prepared following this EARF;
- (iii) Conduct due diligence of associated facilities and/or audit of existing facilities, if any, during the detailed design phase, as defined in ADB SPS;
- (iv) Conduct of meaningful consultations and ensure issues/concerns/suggestions raised are incorporated in the design and updated/final IEE reports;
- (v) Ensure relevant provisions from the updated/final IEE reports and EMPs are incorporated in the bid and contract documents;
- (vi) Support in implementing the grievance redress mechanism and ensure members of the grievance committee have the necessary capacity to resolve project-related issues/concerns;

- (vii) Together with the social safeguards experts, conduct safeguards capacity building to ensure PMU and contractors have the capacity to implement, monitor, and report on implementation of EMPs, resettlement plans and indigenous peoples plans (if any); and
- (viii) Monitor implementation of EMPs at all work sites, including all potential safeguard issues identified in the safeguard documentation mentioned above;
- (ix) Monitor any unanticipated environmental risks or impacts that arise during construction, implementation or operation of the subprojects that were not considered in the IEE reports and EMPs. Prepare corrective action plans and ensure that these are implemented by the contractors and reported accordingly in environmental monitoring reports to ADB; and
- (x) Undertake all other tasks to ensure the project complies with ADB SPS and national environmental laws, rules, and regulations.

. **DBO Contractor (and subcontractor/s, if any).** The IEE reports with EMPs will form part of bidding and contract documents and verified by PMU. The DBO Contractor will be required to designate their respective environment, health and safety officers (or equivalent) to ensure effective implementation of EMP and SEMP, including other specific work plans, during civil works. DBO Contractor is to carry out all environmental mitigation and monitoring measures outlined in its contract and this IEE report. The DBO Contractor will be required to submit to PMU, for review and approval, corresponding SEMP and other required work plans per this IEE report. These plans should be able to provide information on (i) proposed sites/locations for construction work camps, storage areas, hauling roads, lay down areas, disposal areas for solid and hazardous wastes; (ii) specific mitigation measures following the approved EMP; (iii) monitoring program per EMP; and (iv) budget for SEMP and EMP implementation, among others. No works can commence until corresponding SEMPs and required work plans are approved by PMU.

. Specifically, the DBO Contractor will have the following responsibilities, among others, that will be included in the bid and contract documents:

- (i) Ensure that the infrastructure development works are carried out in an environmentally friendly manner, minimizing environmental impacts while ensuring the health and safety of all its workers and the minimizing disturbance to the surrounding environment and communities;
- (ii) Consideration of ADB SPS, national regulations and the EMP during bid preparation and cost estimation;
- (iii) Hire or designate a full time Environment, Health and Safety Officer (or equivalent) responsible for compliance to ADB SPS requirements, national regulations and the EMP/SEMP and other required work plans. The officer/staff must have a clear terms of reference and responsibilities to ensure that all environmental concerns are properly managed;
- (iv) Ensure regular reporting to the PMU on work progress and alert management on any potential issues or delays;
- (v) Strictly follow health and safety measures at the subproject sites;
- (vi) Obtain the necessary permits and clearances, if any is required for the DBO Contractor, to implement the subproject;
- (vii) Ensure that all worker recruitment and OHS requirements are complied;
- (viii) Take necessary corrective action to rectify any non-conformance, including actions related to grievances;
- (ix) Institute an emergency plan for natural calamities/disasters and accidents at the site;

- (x) Follow chance finds procedures to discovery of any physical cultural artifact;
- (xi) Ensure any sub-contractors/suppliers who are utilized within the context of the contract comply with the environmental requirements of the EMP. The contractor will be held responsible for non-compliance on their behalf; and
- (xii) Supply method statements for all activities requiring special attention as specified and/or requested by the MDSC environment specialist for the duration of the contract.

A copy of the EMP/approved SEMP and other required work plans will be kept on-site during the construction period at all times. Non-compliance with, or any deviation from, the conditions set out in the EMP/SEMP constitutes a failure in compliance and will require corrective actions.

**Table 14: Summary of Environmental Safeguards Roles and Responsibilities**

Project Management Unit	Environment Specialist Consultant	ADB
<b>Pre-construction stage</b>		
Environmental officer of the PMU, with assistance from the environment specialist consultant, to conduct Rapid Environmental Assessment (REA) for each site of proposed subprojects using checklist available from ADB. Based on the REA, categorize the project based on ADB SPS. Submit all categorization forms to ADB.	MDSC Environment Specialist Consultant will assist PMU and conduct IEE (or update existing IEE) for all subprojects, including the Water ATM component, which will include an EMP. The environmental expert and other consultants will work with the design team to ensure all relevant environmental considerations are included in the design. The MDSC consultants (environment and social) will assist PMU in the conduct of public consultations during IEE process and incorporate consultation findings into subproject designs and IEEs.	ADB to review the REA checklists and reconfirm the categorization.
Based on its review, PMU will approve the IEE and send to ADB for review and clearance before contract award. The IEE also made available on request. Ensure IEE with the corresponding EMP is part of contract documents for category B subprojects. If the proposed infrastructure is classified as category C, the PMU to provide generic mitigation measures, if any, to be implemented. For Category C, no IEE/EIA is required, and only a review of the environmental implications is necessary.	After the approval of IEE by PMU and clearance by ADB, the MDSC Environment Specialist Consultant will assist PMU in disseminating the IEE to public for information as required by ADB SPS.	ADB will review and provide clearance of IEE/EMPs before award of contracts. ADB will disclose cleared and government-endorsed IEEs on its website.
Environmental officer of PMU to provide guidance to the PMU consultant team to ensure compliance of all undertakings with regulatory requirements with regard to environment. This shall include guidance in preparation of the documents as required for the issuance of environmental clearance and other necessary clearances such as for	The MDSC Environment Specialist Consultant shall support the PMU environmental safeguards officer in compiling the necessary information required for submission of application forms for clearances, obtaining NOC from local authorities, etc., including	ADB to ensure that the clearance requirements are included in the contract provisions/EMP.

Project Management Unit	Environment Specialist Consultant	ADB
example forest clearances if required, submission of application forms, and liaising with agencies towards obtaining these clearances from relevant government agencies. Environmental officer of PMU shall notify the ADB on obtaining of these clearances, including the conditions specified if any in the clearances, and integration of these into the contracts/EMP.	coordinating with the DOE on a regular basis and provide necessary documentation and clarifications as required until the environmental clearance is issued.	
Environmental officer of PMU to ensure that the IEE containing the EMP of each subproject is included in the bid and contract documents. At the same time, the Environmental officer of PMU to ensure that the total budget for implementing the EMP is included in the bid and contract documents.	The MDSC Environment Specialist Consultant will support the PMU environmental safeguards officer in ensuring that each contractor: (i) prepares its SEMP based on the EMP in the IEE, and (ii) has budget allocated for the implementation of the SEMP.	
<b>Construction stage</b>		
PMU to review the monthly monitoring reports from the environment specialist consultant to ensure that all mitigation measures are implemented. PMU to consolidate the monthly reports and submit semi-annual reports to ADB for review. Corrective actions to be undertaken if needed.	Contractors to conduct environmental monitoring and implement SEMPs/EMPs. The MDSC Environment Specialist Consultant will assist the PMU environmental officer in (i) review and approval of contractors' implementation plans such as EMPs/SEMPs, and (ii) monitor the implementation of mitigation measures in the EMPs/SEMPs by contractors. The MDSC Environment Specialist Consultant will also compile monthly progress reports from contractor/s including a section on implementation of the mitigation measures and results of its own monitoring, and submit to PMU for review.	ADB to review semi-annual environmental monitoring report and disclose on its website; and provide necessary advice/guidance needed to the PMU.
<b>Operation Stage</b>		
PMU to conduct monitoring, as specified in the environmental monitoring plan of EMP. NCC to monitor the performance, if required and as specified in monitoring plan of EMP.	ADB to review semi-annual environmental monitoring report and disclose on its website.	
PMU to continue submission of semi-annual environmental monitoring report to ADB until ADB issues a Project Completion Report.	ADB to prepare Project Completion Report	

ADB = Asian Development Bank, EIA = environmental impact assessment, EMP = environmental management plan, IEE = initial environmental examination, MDSC = Management, Design and Supervision Consultant, NCC = Narayanganj City Corporation, NOC = no objection certificate, PMU = project management unit, REA = rapid environmental assessment, SEMP = site-specific environmental management plan, SPS = safeguards policy statement.

## B. Capacity Development

In order to ensure smooth implementation and monitoring of the EMP, it is important that all key implementation stakeholders have the necessary capacity and knowledge about the requirements of ADB SPS and relevant government environmental laws, rules and regulations. The MDSC Environmental Specialist will train and assist key stakeholders, particularly NCC and PMU, in developing the capacity. An indicative training program outlined below will be utilized by the MDSC Environment Specialist in the conduct of training.

The proposed capacity building program will include:

- (i) sensitization of NCC and PMU staff and stakeholders on environmental management, including on the ADB, and Government of Bangladesh requirements on environment;
- (ii) capacity building programs to improve the capability of environment staff at all levels in carrying out/monitoring and implementing environmental management measures for the subproject; and
- (iii) capacity building programs on environmental issues including quality monitoring.

The MDSC Environmental Specialist will provide the basic training required for environmental awareness followed by specific aspects of infrastructure improvement projects along with environmental implications for projects. Specific modules customized for the available skills set will be devised after assessing the capabilities of the members of the Training Program and the requirements of the subproject. The entire training would cover basic principles of environmental assessment and management mitigation plans and programs, implementation techniques, monitoring methods and tools. The proposed training program along with the frequency of sessions is presented in table below.

**Table 15: Training Modules for Environmental Management**

Program	Description	Participants	Form of Training	Duration	Trainer /Agency
Introduction and sensitization to environment issues	<p>Sensitization on environmental concerns</p> <p>Environmental impacts of water supply projects, drainage projects, and urban developments such as green space and parks improvements.</p> <p>Environmental regulations of the Government and ADB SPS</p> <p>Coordination between</p>	<p>NCC engineers / management team, officials responsible for implementing the overall project and subprojects, and other NCC Officials and PMU Environmental Safeguards Officer</p> <p>Contractors (both DBO contractors and civil works contractors)</p>	Workshop	One-day workshop during construction	MDSC Environment Specialist

Program	Description	Participants	Form of Training	Duration	Trainer /Agency
	departments for implementation of environmental issues.				
Training on hazards, health, safety and environmental issues pertaining to the overall project and subprojects.	<p>Sensitization and training for engineering and management professionals, to be involved in on-site execution and operation of the overall project and subprojects.</p> <p>Special training on handling and disposal of asbestos-containing materials such as asbestos cement pipes.</p> <p>Special training on testing, handling and disposal of sludge from WTP operations.</p>	<p>NCC engineers/ Management Team, PMU Environmental Safeguards Officer</p> <p>Contractors (both DBO contractors and civil works contractors)</p>	Workshops , site visits	Two days before and during construction	<p>MDSC Environment Specialist and Health and Safety Specialist</p> <p>Asbestos Expert (may be hired by MDSC as resource person during the training)</p> <p>Hazardous Materials Management Expert (may be hired by MDSC as resource person during the training)</p>
EMP implementation	<p>Implementation of EMP</p> <p>Identification of environment impacts</p> <p>Monitoring and reporting for EMP</p> <p>Public interactions and consultations</p> <p>Coordination for consents with various departments</p>	<p>NCC engineers, officials responsible for implementing the overall project and subprojects, and other NCC Staff, PMU Environmental Safeguards Officer</p> <p>Contractors (both DBO contractors and civil works contractors)</p>	Lectures and field visit	Two-day session at construction stage	MDSC Environment Specialist

Program	Description	Participants	Form of Training	Duration	Trainer /Agency
	Monitoring formats, filling and review of impacts				

### C. Staffing Requirement and Budget

. Costs required for implementing the EARF will cover the following activities:

- (i) Manpower resources such as consultants or experts required;
- (ii) Administrative expenses, such as costs of application for Environmental Clearance and other statutory clearances/permits, etc.;
- (iii) Conducting environmental assessments of future Water ATMs, preparing and submitting reports and meaningful consultations and disclosure; and
- (iv) Implementation of EMP and any other activities necessary for effective compliance with the requirements of the EARF.

. For budgeting purposes, it is assumed that the future Water ATM subproject will be classified by ADB as Category B (requiring IEE), and that the report will also be deemed satisfactory by NCC/PMU. Some undertakings may require a simpler environmental review, but this is discounted for budgeting purposes. PMU will aim to produce a single document that is acceptable to both ADB and NCC to avoid duplication of effort.

. The initial draft IEE report to be prepared may involve approximately two working weeks equivalent of effort by an experienced environmental specialist, conducting the following activities: (i) site visit to assess environmental conditions and potential impacts of the scheme; (ii) liaison with the local government agencies to obtain any environmental/social data that might be available locally (e.g. population figures, designated sites, etc.); (iii) consultation with the local community to inform them about the project and the subprojects and identify their views and concerns; (iv) assessment of impacts and development of mitigation; and (v) desk study and report preparation. Any subsequent updating of the IEE as described above will generally take approximately the same time depending on the new sites identified for Water ATMs.

. A Water ATM is generally straightforward to build and complete. Environmental monitoring during construction will also be straightforward and will involve periodic site observations and interviews with workers and others, plus checks of reports and other documents. This will be conducted by the MDSC Environment Specialist Consultant and will be supervised by the PMU environment officer.

. The cost of mitigation measures and surveys during construction stage will be incorporated into the contractor's costs, which will be binding upon the contractor. Any surveys required will be conducted by the contractor.

The operation phase mitigation measures are again of good operating practices, which will be the responsibility of the NCC in the future. All monitoring during the operation and maintenance phase will be conducted by and costs borne by NCC.

The indicative costs of EARF implementation are shown in Table 16.

**Table 16: Indicative Cost of Environmental Assessment and Review Framework Implementation**

Component	Description	Number	Cost Per Unit (\$)	Cost (\$)	Source of Funds
<b>A. Consultant Cost</b>					
Environmental Expert	Responsible for preparation of draft IEE for the Water ATM Subproject and updating of the same IEE, if necessary, based on detailed design and new sites.  Responsible for monitoring implementation of environmental safeguards of the Water ATM subproject during the pre-construction and construction phases.	12-person months <sup>a</sup>	\$3,000	\$72,000	Remuneration and budget for travel covered in the consultant contract in the MDSC.
<b>B. Administrative Costs</b>					
Legislation, permits, and agreements	Permit for excavation, location clearance, etc.	Lump sum	\$1,000	\$1,000	These consents are to be obtained by contractor at its own expense.
	Environmental assessment and environmental clearances as per national requirements Obtaining right of way clearances with related national agencies, if required.	Lump sum	\$5,000	\$5,000	NCC cost
<b>C. Environmental Monitoring Costs</b>					
Baseline monitoring prior to construction	During detailed design stage to establish existing environmental conditions	Lump sum	\$5,000	\$5,000	Covered under MDSC contract
	Before start of construction works				
Monitoring during construction	(i) Ambient air quality; (ii) Surface water quality; (iii) Noise level. Sampling sites near sensitive areas (schools, hospitals, places of	1 sample each for noise, ambient air quality, drinking water	\$500 per site	\$27,000 <sup>b</sup>	Contractor's cost

Component	Description	Number	Cost Per Unit (\$)	Cost (\$)	Source of Funds
	worship, historical/cultural areas); and (iv) Drinking water quality at labor camps.	quality, receiving/adjacent body of water			
<b>D. Other Costs</b>					
Public consultations and information disclosure	Information disclosure and consultations during preconstruction and construction phase, including public awareness campaign through media	As per requirement	Lump sum	\$15,000	Covered under MDSC contract
Capacity building	(i) Introduction and sensitization to environment issues; (ii) Training on hazards, health, safety and environmental issues pertaining to the overall project and subprojects; and (iii) Training on EMP implementation	Module 1 – immediately upon engagement of the PMU consultants Module 2 – prior to award of civil works contracts (twice a year for 4 years) Module 3 – during implementation (twice a year for 4 years)	Module 1 - \$500 Module 2 - \$200 Module 3 - \$200	\$3,700	Covered under MDSC contract
GRM implementation	Costs involved in resolving complaints (meetings, consultations, communication, and reporting/information dissemination)	Lump sum	Part of administration cost of PMU	\$1,500 per year	PMU cost
Any unanticipated impact due to project implementation	Mitigation of any unanticipated impact arising during construction phase and defect liability period	Lump sum	Contractor's liability	As per insurance requirement	Contractor's insurance

<sup>a</sup> National Consultant for the EARF implementation and national consultant for the other subprojects under NGRUDP will be one and the same. The engagement is based on intermittent inputs and the period is indicative. This may be adjusted accordingly based on the need of PMU. It is expected that the consultant will be utilized with more inputs during the initial period of implementation and lesser inputs towards the end of implementation.

<sup>b</sup> This indicative cost assumes to cover all environmental sampling activities (ambient air, noise, surface water, drinking water) for 27 sites for approximately twice a year for one year.

ADB = Asian Development Bank, EARF = environmental assessment and review framework, EMP = environmental management plan, GRM = grievance redress mechanism, IEE = initial environmental examination, NCC = Narayananj City Corporation, PMU = project management unit.

## VIII. MONITORING AND REPORTING

. NCC through the PMU will monitor the progress of EMP implementation. The PMU, with support from MDSC, will undertake site inspections and document review to verify compliance with the EMP and progress toward the final outcome. The DBO Contractor will conduct day to day implementation of the SEMP.

. The DBO Contractor will submit monthly reports to the PMU. The monthly reports will include compilation of copies of monitoring sheets accomplished and duly signed by the DBO Contractor's EHS manager (or equivalent) on a daily basis. A sample daily monitoring sheet which can be used by the DBO Contractor is in Appendix 6. This monitoring sheet is indicative which can be further enhanced depending on the actual situations at construction sites.

. PMU, with support from MDSC, shall also conduct its own monitoring activities consistent with the indicators in the EMP to confirm that all environmental safeguard measures are properly implemented at the subproject site, including in the surrounding communities. A sample monitoring sheet which can be used by PMU or MDSC is in Appendix 7. Similarly, this monitoring sheet is indicative which can be further enhanced depending on the actual situations and other needs of information during the implementation phase.

. PMU, with support from MDSC, shall consolidated its own findings with the reports from the contractors. Based on consolidated information, PMU shall accomplish semi-annual environmental monitoring reports (SEMRs) for the overall project, which shall be submitted to ADB for review and disclosure on ADB website. Submission of SEMR will continue until ADB issues a Project Completion Report. The template for the SEMR is available in the Project Administration Manual.

. ADB will carry out the following monitoring actions to supervise the subproject:

- (i) On a need basis, conduct visits when potential adverse environmental or social impact exists;
- (ii) Conduct supervision missions with detailed review by ADB's environment/social safeguard specialists and/or officers and/or consultants for components with adverse environmental and social impacts;
- (iii) Review the SEMRs submitted by PMU to ensure that adverse impacts and risks are mitigated as planned in the EMP;
- (iv) Work with PMU to rectify to the extent possible any failures to comply with its environmental safeguard commitments, as covenanted in the loan agreement and elaborated in all environmental safeguard documents; and formulate and implement a corrective action plan to re-establish compliance as appropriate; and
- (v) Prepare a project completion report that assesses whether the objective and desired outcomes of the safeguard plans have been achieved, taking into account the baseline conditions and the results of monitoring.

. ADB's monitoring and supervision activities are carried out on an on-going basis until a project completion report is issued. ADB issues completion report within 1-2 years after the project is physically completed and in operation.

## Appendix 1: ADB Prohibited Investment Activities List

The following do not qualify for Asian Development Bank financing:

- (i) production or activities involving harmful or exploitative forms of forced labor<sup>1</sup> or child labor;<sup>2</sup>
- (ii) production of or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements or subject to international phaseouts or bans, such as (a) pharmaceuticals,<sup>3</sup> pesticides, and herbicides,<sup>4</sup> (b) ozone-depleting substances,<sup>5</sup> (c) polychlorinated biphenyls<sup>6</sup> and other hazardous chemicals,<sup>7</sup> (d) wildlife or wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora,<sup>8</sup> and (e) transboundary trade in waste or waste products;<sup>9</sup>
- (iii) production of or trade in weapons and munitions, including paramilitary materials;
- (iv) production of or trade in alcoholic beverages, excluding beer and wine;<sup>10</sup>
- (v) production of or trade in tobacco;<sup>10</sup>
- (vi) gambling, casinos, and equivalent enterprises;<sup>10</sup>
- (vii) production of or trade in radioactive materials,<sup>11</sup> including nuclear reactors and components thereof;
- (viii) production of, trade in, or use of unbonded asbestos fibers;<sup>12</sup>
- (ix) commercial logging operations or the purchase of logging equipment for use in primary tropical moist forests or old-growth forests; and
- (x) marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats.

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<sup>1</sup> Forced labor means all work or services not voluntarily performed, that is, extracted from individuals under threat of force or penalty.

<sup>2</sup> Child labor means the employment of children whose age is below the host country's statutory minimum age of employment or employment of children in contravention of International Labor Organization Convention No. 138 "Minimum Age Convention" ([www.ilo.org](http://www.ilo.org)).

<sup>3</sup> A list of pharmaceutical products subject to phaseouts or bans is available at <http://www.who.int>.

<sup>4</sup> A list of pesticides and herbicides subject to phaseouts or bans is available at <http://www.pic.int>.

<sup>5</sup> A list of the chemical compounds that react with and deplete stratospheric ozone resulting in the widely publicized ozone holes is listed in the Montreal Protocol, together with target reduction and phaseout dates. Information is available at <http://www.unep.org/ozone/montreal.shtml>.

<sup>6</sup> A group of highly toxic chemicals, polychlorinated biphenyls are likely to be found in oil-filled electrical transformers, capacitors, and switchgear dating from 1950 to 1985.

<sup>7</sup> A list of hazardous chemicals is available at <http://www.pic.int>.

<sup>8</sup> A list is available at <http://www.cites.org>.

<sup>9</sup> As defined by the Basel Convention; see <http://www.basel.int>.

<sup>10</sup> This does not apply to project sponsors who are not substantially involved in these activities. Not substantially involved means that the activity concerned is ancillary to a project sponsor's primary operations.

<sup>11</sup> This does not apply to the purchase of medical equipment, quality control (measurement) equipment, and any equipment for which ADB considers the radioactive source to be trivial and adequately shielded.

<sup>12</sup> This does not apply to the purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%.

## Appendix 2: Outline of Initial Environmental Examination Report<sup>1</sup>

1. An initial environmental examination (IEE) report is required for all environment B projects. Its level of detail and comprehensiveness is commensurate with the significance of potential environmental impacts and risks. An IEE report will follow the outline below. The substantive aspects of this outline will guide the preparation of environmental impact assessment reports, although not necessarily in the order shown. IEEs for sample subprojects have been prepared during loan processing, which will serve as actual reference for the preparation of IEE reports of future subprojects.
2. **Executive Summary.** Describe concisely the critical facts, significant findings, and recommended actions.
3. **Policy, Legal, and Administrative Framework.** Discuss the national and local legal and institutional framework within which the environmental assessment is carried out. Identify project-relevant international environmental agreements to which Government of Bangladesh is a party.
4. **Description of the Project.** Describe the project, its major components, and its geographic, ecological, social, and temporal context, including any associated facility required by and for the subproject/package (for example, access roads, power plants, water supply, quarries and borrow pits, and spoil disposal). Include drawings and maps showing the project's layout and components, the project site, and the project's area of influence.
5. **Description of the Environment (Baseline Data).** Describe relevant physical, biological, and socioeconomic conditions within the project area. Include any known current and proposed development activities within the project's area of influence, including those not directly connected to the project. Indicate the accuracy, reliability, and sources of the data.
6. **Anticipated Environmental Impacts and Mitigation Measures.** Predict and assess the project's likely positive and negative direct and indirect impacts to physical, biological, socioeconomic (including occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods through environmental media and physical cultural resources in the project's area of influence, in quantitative terms to the extent possible; identify mitigation measures and any residual negative impacts that cannot be mitigated; explore opportunities for enhancement; identify and estimate the extent and quality of available data, key data gaps, and uncertainties associated with predictions and specify topics that do not require further attention; and examine global, trans boundary, and cumulative impacts as appropriate.
7. **Analysis of Alternatives.** Examine alternatives to project or project component site, technology, design, and operation—including the no project alternative—in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements. State the basis for selecting the particular project design proposed and justify recommended emission levels and approaches to pollution prevention and abatement.
8. **Information Disclosure, Consultation, and Participation.** (i) Describe the process undertaken during project design and preparation for engaging stakeholders, including

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<sup>1</sup> Suggested outline per ADB SPS.

information disclosure and consultation with affected people and other stakeholders; (ii) Summarize comments and concerns received from affected people and other stakeholders and how these comments have been addressed in project design and mitigation measures, with special attention paid to the needs and concerns of vulnerable groups, including women, the poor, and Indigenous Peoples; and (iii) Describe the planned information disclosure measures (including the type of information to be disseminated and the method of dissemination) and the process for carrying out consultation with affected people and facilitating their participation during project implementation.

9. **Grievance Redress Mechanism.** Describe the grievance redress framework (both informal and formal channels), setting out the time frame and mechanisms for resolving complaints about environmental performance.

10. **Environmental Management Plan.** Describe and discuss the set of mitigation and management measures to be taken during project implementation to avoid, reduce, mitigate, or compensate for adverse environmental impacts (in that order of priority). Include multiple management plans and actions, if necessary. Include the following key components (with the level of detail commensurate with the project's impacts and risks):

- (i) **Mitigation.** Identify and summarize anticipated significant adverse environmental impacts and risks; describe each mitigation measure with technical details, including the type of impact to which it relates and the conditions under which it is required (for instance, continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate; and provide links to any other mitigation plans (for example, for involuntary resettlement, Indigenous Peoples, or emergency response) required for the project.
- (ii) **Monitoring.** Describe the monitoring measures with technical details, including parameters to be measured, methods to be used, sampling locations frequency of measurements, detection limits and definition of thresholds that will signal the need for corrective actions; and describe monitoring and reporting procedures to ensure early detection of conditions that necessitate particular mitigation measures and document the progress and results of mitigation.
- (iii) **Implementation arrangements.** Specify the implementation schedule showing phasing and coordination with overall project implementation; describe institutional or organizational arrangements, namely, who is responsible for carrying out the mitigation and monitoring measures, which may include one or more of the following additional topics to strengthen environmental management capability: technical assistance programs, training programs, procurement of equipment and supplies related to environmental management and monitoring, and organizational changes; and estimate capital and recurrent costs and describe sources of funds for implementing the environmental management plan.
- (iv) **Performance indicators.** Describe the desired outcomes as measurable events to the extent possible, such as performance indicators, targets, or acceptance criteria that can be tracked over defined time periods.

11. **Conclusion and Recommendation.** Provide the conclusions drawn from the assessment and provide recommendations.

### Appendix 3: Rapid Environmental Assessment Checklist for Urban Development Project

Country/Project Title:

Screening Questions	Yes	No	Remarks
<b>A. Project Siting</b> Is the project area...			
▪ Densely populated?			
▪ Heavy with development activities?			
▪ Adjacent to or within any environmentally sensitive areas?			
• Cultural heritage site			
• Protected Area			
• Wetland			
• Mangrove			
• Estuarine			
• Buffer zone of protected area			
• Special area for protecting biodiversity			
• Bay			
<b>B. Potential Environmental Impacts</b> Will the Project cause...			
▪ impacts on the sustainability of associated sanitation and solid waste disposal systems and their interactions with other urban services.			
▪ deterioration of surrounding environmental conditions due to rapid urban population growth, commercial and industrial activity, and increased waste generation to the point that both manmade and natural systems are overloaded and the capacities to manage these systems are overwhelmed?			
▪ degradation of land and ecosystems (e.g. loss of wetlands and wild lands, coastal zones, watersheds and forests)?			
▪ dislocation or involuntary resettlement of people?			
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples, or other vulnerable group?			
▪ degradation of cultural property, and loss of cultural heritage and tourism revenues?			
▪ occupation of low-lying lands, floodplains, and steep hillsides by squatters and low-income groups, and their exposure to increased health hazards and risks due to pollutive industries?			
▪ water resource problems (e.g. depletion/degradation of available water supply, deterioration for surface and ground water quality, and pollution of receiving waters)?			
▪ air pollution due to urban emissions?			
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, and biological hazards during project construction and operation?			
▪ road blocking and temporary flooding due to land excavation during rainy season?			
▪ noise and dust from construction activities?			
▪ traffic disturbances due to construction material transport and wastes?			
▪ temporary silt runoff due to construction?			

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none"> <li>▪ hazards to public health due to ambient, household and occupational pollution, thermal inversion, and smog formation?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ water depletion and/or degradation?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ overpaying of ground water, leading to land subsidence, lowered ground water table, and salinization?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ contamination of surface and ground waters due to improper waste disposal?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ pollution of receiving waters resulting in amenity losses, fisheries and marine resource depletion, and health problems?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ social conflicts if workers from other regions or countries are hired?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during operation and construction?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation, and decommissioning?</li> </ul>			

### A Checklist for Preliminary Climate Risk Screening

**Country/Project Title:** \_\_\_\_\_

Screening Questions		Score	Remarks <sup>a</sup>
<b>Location and Design of project</b>	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather-related events such as floods, droughts, storms, landslides?		
	Would the project design (e.g., the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc.)?		
<b>Materials and Maintenance</b>	Would weather, current, and likely future climate conditions (e.g., prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g., construction material)?		
	Would weather, current, and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?		
<b>Performance of project outputs</b>	Would weather, climate conditions, and related extreme events likely affect the performance (e.g., annual power production) of project output(s) (e.g., hydro-power generation facilities) throughout their design lifetime?		

<sup>a</sup> If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1–4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

**Result of Initial Screening (Low, Medium, High):** \_\_\_\_\_

**Other Comments:** \_\_\_\_\_  
 \_\_\_\_\_

**Prepared by:** \_\_\_\_\_

**Appendix 4: Sample Grievance Registration Form**  
(To be available in the local language)

The \_\_\_\_\_ Project welcomes complaints, suggestions, queries and comments regarding project implementation. We encourage persons with grievance to provide their name and contact information to enable us to get in touch with you for clarification and feedback.

Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing **\*(CONFIDENTIAL)\*** above your name. Thank you.

<b>Date</b>		<b>Place of registration</b>			
<b>Contact Information/Personal Details</b>					
<b>Name</b>		<b>Gender</b>	<ul style="list-style-type: none"> <li>• Male</li> <li>• Female</li> </ul>	<b>Age</b>	
<b>Home Address</b>					
<b>Village / Town</b>					
<b>District</b>					
<b>Phone no.</b>					
<b>E-mail</b>					
<b>Complaint/Suggestion/Comment/Question</b> Please provide the details (who, what, where and how) of your grievance below: If included as attachment/note/letter, please tick here:					
<b>How do you want us to reach you for feedback or update on your comment/grievance?</b>					

**FOR OFFICIAL USE ONLY**

<b>Registered by:</b> (Name of Official registering grievance)	
<b>Mode of communication:</b> <ul style="list-style-type: none"> <li>• Note/Letter</li> <li>• E-mail</li> <li>• Verbal/Telephonic</li> </ul>	
<b>Reviewed by:</b> (Names/Positions of Official(s) reviewing grievance)	
<b>Action Taken:</b>	
<b>Whether Action Taken Disclosed:</b>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
<b>Means of Disclosure:</b>	



### Appendix 6: Sample Daily Monitoring Checklist for Contractors

#### NARAYANGANJ GREEN AND RESILIENT URBAN DEVELOPMENT PROJECT Contractor Monitoring Sheet

Name of Subproject: \_\_\_\_\_

Location: \_\_\_\_\_

Contractor: \_\_\_\_\_

Contractor EHS Supervisor (or equivalent): \_\_\_\_\_

Date of monitoring: \_\_\_\_\_

#### Summary of Findings

Monitoring Item	Status	Remarks
<b>1. Compliance with Local Permit Requirements</b>	<b>(Secured / Application Submitted / Not Applicable)</b>	
<i>Location/zoning permits</i>		
<i>Permit to construct</i>		
<i>Building permit</i>		
<i>Transport / hauling permits</i>		
<b>2. Compliance with IEE Requirements</b>	<b>(Approved / Under Preparation / Submitted to PMU for Approval / Not Applicable)</b>	
<i>Site-specific EMP (SEMP)</i>		
<i>Corrective Action Plan, if any</i>		
<b>3. Compliance with SEMP</b>		
<b>Construction Site</b>	<b>(Satisfactory / Needs Improvement / Not Implemented/Not Applicable)</b>	
- Conduct of toolbox talk		
- Use of PPE		
- Rest areas for male and female workers		
- Toilets for male and female workers		
- Medical kits		
- Drinking water supply		
- Dust control		
- Noise control		
- Solid waste management		
- Wastewater management		
- Chemicals storage (fuel, oil, etc.)		
- Siltation or erosion control		
- Heavy equipment staging / parking area		
- Barricades around excavation sites		
- Access to residential houses/shops/businesses		
- Traffic routing signages		
- Lightings at night		
- Trench shoring / landslide protection		
<b>Construction Workers' Camp Site</b>	<b>(Available / Needs Improvement / Not Available / Not Applicable)</b>	
- Quarters for male and female workers		
- Sleeping utilities (e.g. beds, pillows, blankets, mosquito nets, etc.)		
- Power/Electricity supply		

<b>Monitoring Item</b>	<b>Status</b>	<b>Remarks</b>
- Drinking water supply		
- Toilets for male and female workers		
- General purpose water supply (cooking, washing, bathing)		
- Cooking facilities and areas		
- Solid waste management		
- Wastewater management		
- Pest control		
<b>4. Implementation of GRM</b>	<b>(Yes / No or None / Under Resolution)</b>	
<i>Complaints</i>		
<i>Complaints resolution</i>		
<b>5. Environmental Quality Measurement</b>	<b>(Passed / Failed / Not Applicable)</b>	
<i>Ambient air quality sampling</i>		
<i>Noise level measurement</i>		
<i>Receiving water quality sampling</i>		

**Other Issues:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Attachments:**

1. Copies of permits secured, if any.
2. Photos taken at worksites, if any.  
(photos attached in previous monitoring sheets should not be used again).
3. Laboratory results of environmental quality measurements, if any.

**Prepared by:** \_\_\_\_\_  
Name, Designation and Signature

**Appendix 7: Sample Inspection Checklist for Project Management Unit**  
**NARAYANGANJ GREEN AND RESILIENT URBAN DEVELOPMENT PROJECT**  
**SITE INSPECTION CHECKLIST**

Project: \_\_\_\_\_  
 Subproject / Location: \_\_\_\_\_

Date: \_\_\_\_\_

MONITORING/INSPECTION QUESTIONS		FINDINGS			COMMENTS / CLARIFICATIONS
<b>1.</b>	<b>Supervision and Management On-Site</b>	Yes	No	NA	
	a. Is an EHS supervisor available?				
	b. Is a copy of the SEMP available?				
	c. Are daily toolbox talks conducted on site?				
<b>2.</b>	<b>The Facilities</b>	Yes	No	NA	
	a. Are there a medical and first aid kits on site?				
	b. Are emergency contact details available on-site?				
	c. Are there PPEs available? What are they?				
	d. Are the PPEs in good condition?				
	e. Are there firefighting equipment on site?				
	f. Are there separate sanitary facilities for male and female workers?				
	g. Is drinking water supply available for workers?				
	h. Is there a rest area for workers?				
	i. Are storage areas for chemicals available and with protection? in safe locations?				
<b>3.</b>	<b>Occupational Health and Safety</b>	Yes	No	NA	
	a. Are the PPEs being used by workers?				
	b. Are excavation trenches provided with shores or protection from landslide?				
	c. Is breaktime for workers provided?				
	d. How many for each type of collection vehicle is in current use?				
<b>4.</b>	<b>Community Safety</b>	Yes	No	NA	
	a) Are excavation areas provided with barricades around them?				
	b) Are safety signages posted around the sites?				
	c) Are temporary and safe walkways for pedestrians available near work sites?				
	d) Is there a record of treated wastewater quality testing/measurement?				
<b>5.</b>	<b>Solid Waste Management</b>	Yes	No	NA	
	a. Are excavated materials placed sufficiently away from water courses?				
	b. Is solid waste segregation and management in place?				
	c. Is there a regular collection fo solid wastes from work sites?				
<b>6.</b>	<b>Wastewater Management</b>	Yes	No	NA	
	a) Are there separate sanitary facilities for various types of use (septic tanks, urination, washing, etc.)?				
	b) Is any wastewater discharged to storm drains?				
	c) Is any wastewater being treated prior to discharge?				
	d) Are measures in place to avoid siltation of nearby drainage or receiving bodies of water?				

MONITORING/INSPECTION QUESTIONS		FINDINGS			COMMENTS / CLARIFICATIONS
	e) Are silt traps or sedimentation ponds installed for surface runoff regularly cleaned and freed of silts or sediments?				
7.	Dust Control	Yes	No	NA	
	a. Is the construction site watered to minimize generation of dust?				
	b. Are roads within and around the construction sites sprayed with water on regular intervals?				
	c. Is there a speed control for vehicles at construction sites?				
	d. Are stockpiles of sand, cement and other construction materials covered to avoid being airborne?				
	e. Are construction vehicles carrying soils and other spoils covered?				
	f. Are generators provided with air pollution control devices?				
	g. Are all vehicles regularly maintained to minimize emission of black smoke? Do they have valid permits?				
8.	Noise Control	Yes	No	NA	
	a) Is the work only taking place between 7 am and 7 pm, week days?				
	b) Do generators operate with doors closed or provided with sound barrier around them?				
	c) Is idle equipment turned off or throttled down?				
	d) Are there noise mitigation measures adopted at construction sites?				
	e) Are neighboring residents notified in advance of any noisy activities expected at construction sites?				
9.	Traffic Management	Yes	No	NA	
	a) Are traffic signages available around the construction sites and nearby roads?				
	b) Are re-routing signages sufficient to guide motorists?				
	c) Are the excavation sites along roads provided with barricades with reflectors?				
	d) Are the excavation sites provided with sufficient lighting at night?				
10.	Recording System	Yes	No	NA	
	a) Do the contractors have recording system for SEMP implementation?				
	b) Are the daily monitoring sheets accomplished by the contractor EHS supervisor (or equivalent) properly compiled?				
	c) Are laboratory results of environmental sampling conducted since the commencement of construction activities properly compiled?				
	d) Are these records readily available at the site and to the inspection team?				

Other Issues: \_\_\_\_\_

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**Prepared by:** \_\_\_\_\_  
Name, Designation and Signature