Annexure-II

Terms of Reference (ToR) for Consultants

Although this Terms of Reference (TOR) contains separate sections for activities related to Dhaka Water Supply and Sewerage Authority (DWASA), Dhaka North City Corporation (DNCC), Dhaka South City Corporation (DSCC), Narayanganj City Corporation (NCC), Gazipur City Corporation (GCC), and the Department of Environment (DoE), the selected consulting firm shall be responsible for carrying out all tasks and deliverables described herein under a single contract, ensuring coordination with all relevant agencies for successful completion of the overall scope of work.

❖ Dhaka Water Supply and Sewerage Authority (DWASA):

1. Data collection and analysis for designing the proposed 16 km Gulshan-Banani and Baridhara sewage interceptor under the Dasherkandi sewerage network. The task includes (but not limited to):
    - **Topographic Survey** (detailed route survey with contouring, cross-sections, benchmarks, and GIS mapping)
    - **Underground Utility Survey** (mapping of existing water lines, sewer lines, storm drains, gas lines, electric cables, telecom lines, etc.)
    - **Geotechnical Investigation** (borehole drilling, soil testing, groundwater level assessment, laboratory tests for foundation and pipeline design)
    - **Hydraulic and Flow Survey** (flow measurement, peak flow analysis, catchment delineation, infiltration/inflow assessment)
    - **Condition Assessment Survey** (CCTV inspection of existing sewers, if applicable)
    - **Traffic Survey and Management Study** (traffic volume count, impact analysis, and traffic management planning during construction)
    - **Environmental and Social Impact Assessment (ESIA),** including an environmental baseline survey
    - **Hydrographic Survey** (if alignment crosses canals, lakes, or water bodies)
    - **Land and Right-of-Way (ROW) Survey**
    - **Structural Assessment Survey** (for nearby structures affected by deep excavation, if required)

2. Prepare design drawings and cost estimates of the 16 km Gulshan-Banani and Baridhara sewage interceptor with a Sewage Lifting Station (SLS) under the Dasherkandi sewerage network, including:
    - Hydraulic design of the interceptor and SLS
    - Structural design of pipes, chambers, thrust blocks, and SLS structures
    - Mechanical and electrical design of pumps and equipment
    - Detailed engineering drawings (plan, profile, sections)
    - BOQ and Engineer's Cost Estimate
    - Construction methodology and technical specifications

3. An assessment of the cost of service provisioning for the sewerage network and a cost recovery assessment for the sewerage system.

Dhaka North City Corporation (DNCC):

- **Identification of canals, drains, streams, and other water bodies carrying domestic wastewater (black water and grey water) into the Baunia and Rupnagar.**
- Identification (and demarcation) of zones/areas (termed as "target areas"), including households, institutions, communities, etc., that discharge domestic wastewater into the canals/drains/streams/water bodies connected to Baunia and Rupnagar.
- Assessment of containment (pit/septic tank) in the buildings in the identified areas, including the volume, emptying frequency, and access to containments.
- Design an operational schedule targeting 100% fecal sludge collection coverage in the "target areas," including routing of fecal sludge collection vehicles from the point of generation to the Dasherkandi STP.
- Design of primary and secondary solid waste collection systems in the "target areas" around Baunia and Rupnagar canals, to achieve 100% collection efficiency.
- Design drawing and cost estimate of a secondary transfer station with a leachate management system and a segregation unit.
- Selection of potential sites for secondary transfer stations with a leachate management system and a segregation unit.
- An assessment of the cost of service provisioning for the FSM and SWM services in the target areas and a cost recovery assessment for the FSM and SWM system.
- Finalize the Key Performance Indicator (KPI) options for performance-based contracting for SWM and FSM.
- Prepare a cross-sectional design for the canal rehabilitation works for a 50 m interval for the Baunia and Rupnagar canals (detailed scope of data collection for this task provided in section 3.7).
- Topography survey and Traffic survey for construction planning.

❖ **Dhaka South City Corporation (DSCC):**

- Identification of canals, drains, streams, and other water bodies carrying domestic wastewater (black water and grey water) into the Kajla, Mridhabari, and Zia Sarani canals.
- Identification (and demarcation) of zones/areas (termed as "target areas"), including households, institutions, communities, etc., that discharge domestic wastewater into the canals/drains/streams/water bodies connected to Kajla, Mridhabari, and Zia Sarani canals.
- Assessment of containment (pit/septic tank) in the buildings in the identified areas, including the volume, emptying frequency, and access to containments.
- Design an operational schedule targeting 100% fecal sludge collection coverage in the "target areas," including routing of fecal sludge collection vehicles from the point of generation to the Pagla STP.
- Design of primary and secondary solid waste collection systems in the "target areas" around Kajla, Mridhabari, and Zia Sarani canals, to achieve 100% collection efficiency.
- Design drawing and cost estimates of a secondary transfer station with a Material Recovery Facility (MRF).
- Survey of solid waste (characterization and quantity) and prepare a conceptual design for the recycling plant at Matuil Landfill.
- Prepare a cross-sectional design for the canal rehabilitation works for a 50 m interval for the Kajla, Mridhabari, and Zia Sarani canals (detailed scope of data collection for this task provided in section 3.7).
- Finalize the Key Performance Indicator (KPI) options for performance-based contracting for SWM and FSM.

- An assessment of the cost of service provisioning for the FSM and SWM services in the target areas and a cost recovery assessment for the FSM and SWM system.
- Topography, road network, hydrological runoff, existing drainage system, and utility assessment within the catchment of the master deep drain and hydraulic design with layout plan of the master deep drain.
- Topography survey and Traffic survey for construction planning.

❖ **Narayanganj City Corporation (NCC):**

- Identification of canals, drains, streams, and other water bodies carrying domestic wastewater (black water and grey water) into the Kashipur canal, Sonakanda canal, Mahamud Nagar canal, Modonganj canal, Nal Khali canal, Lakkhyankhola canal, Luhiar canal, Siddirganj main canal, Majumder canal, etc.
- Identification (and demarcation) of zones/areas (termed as "target areas"), including households, institutions, communities, etc., that discharge domestic wastewater into the canals/drains/streams/water bodies connected to the Kashipur canal, Sonakanda canal, Mahamud Nagar canal, Modonganj canal, Nal Khali canal, Lakkhyankhola canal, Luhiar canal, Siddirganj main canal, Majumder canal, etc.
- Assessment of containment (pit/septic tank) in the buildings in the identified areas, including the volume, emptying frequency, and access to containments.
- Design an operational schedule targeting 100% fecal sludge collection coverage in the "target areas," including routing of fecal sludge collection vehicles from the point of generation to the FSTP.
- Design of primary and secondary solid waste collection systems in the "target areas" around the Kashipur canal, Sonakanda canal, Mahamud Nagar canal, Modonganj canal, Nal Khali canal, Lakkhyankhola canal, Luhiar canal, Siddirganj main canal, Majumder canal, etc., to achieve 100% collection efficiency.
- Selection of potential sites for secondary transfer stations with a leachate management system and a segregation unit.
- Finalize the Key Performance Indicator (KPI) options for performance-based contracting for SWM and FSM.
- An assessment of the cost of service provisioning for the FSM and SWM services in the target areas and a cost recovery assessment for the FSM and SWM system.
- Prepare a cross-sectional design for the canal rehabilitation works for a 50 m interval for the Kashipur canal, Sonakanda canal, Mahamud Nagar canal, Modonganj canal, Nal Khali canal, Lakkhyankhola canal, Luhiar canal, Siddhirganj main canal, Majumder canal, etc. (detailed scope of data collection for this task provided in section 3.7).
- Topography survey and Traffic survey for construction planning.

❖ **Gazipur City Corporation (GCC)**

- Prepare an evidence-based and investment-ready master plan, informed by comprehensive field surveys and baseline assessments, to strengthen water supply, sanitation, and solid waste management services within the GCC jurisdiction.
- Develop an institutional strengthening and capacity-building framework for GCC, focusing on governance, operational efficiency, and inclusive service delivery, supported by community engagement and behavior change initiatives on sanitation and solid waste management.

❖ **Department of Environment:**

Project Overview

This feasibility study aims to assess the current environmental state of the Turag River Ecological Critical Area (ECA) and establish a robust framework for its long-term monitoring and management. The study will focus on identifying pollution sources, evaluating water quality, and developing actionable strategies to restore and protect the river's ecological health. The outcomes will support informed decision-making for the Metro Dhaka Water Security and Resilience Program.

Scope

1. State of Environment Assessment of Turag River (scope no 1 & 6 of the approved document)

Objective: To establish a comprehensive baseline understanding of the environmental conditions of the Turag River ECA, which is essential for effective planning, pollution control, and sustainable management.

Scope of Activities:

- **1.1.** Assess and document the present status of the Turag River ECA.
- **1.2.** Identify and map all point and non-point sources of pollution along the river.
- **1.3.** Evaluate the current status of environmental degradation and conduct a comprehensive impact assessment covering:
  - Social impacts (e.g., community health, livelihoods)
  - Economic and financial impacts (e.g., cost of water treatment, loss of fisheries)
  - Environmental impacts (e.g., biodiversity loss, ecosystem disruption)

2. Strategic Monitoring Network Development (scope no 3, 4 & 5 of the approved document)

Objective: To design and establish a scientifically validated, strategic water quality monitoring network for the 65-km stretch of the Turag River, supported by an online monitoring protocol for real-time data collection and analysis.

Scope of Activities:

- **2.1.** Review existing monitoring and sampling locations along the Turag River.
- **2.2.** Identify and select new strategic monitoring locations based on:
  - Hydrological modeling
  - Field validation
  - Environmental and anthropogenic factors
- **2.3.** Design an integrated monitoring network comprising:
  - Fixed monitoring stations
  - Mobile monitoring units for periodic spatial coverage
- **2.4.** Recommend key water-quality parameters to monitor.
- **2.5.** Develop a standardized **online monitoring methodology and protocol** to enable:
  - Systematic, real-time data collection

- Data analysis and reporting
- Effective river health assessment and management

3. Developing Specifications and detailed Terms of Reference (ToR) for establishing 173 monitoring systems in the main project

Objectives: The objective of this assignment is to develop detailed technical specifications and a comprehensive Terms of Reference (ToR) for the establishment of 173 real-time online monitoring systems to be implemented under the "Metro Dhaka Water Security and Resilience Program: Integrated Pollution Monitoring and Enforcement System of Turag River ECA" project.

Scope of Activities:

3.1 Assess the pollution load of 173 polluting industries surrounding the Turag River.

3.2 Develop detailed technical specifications for 173 real-time online monitoring systems.

3.3 Develop comprehensive Terms of Reference (ToR) for the establishment of 173 online monitoring systems.

Expected Outcomes

- A detailed baseline report on the State of Environment of the Turag River ECA.
- A geospatial map of pollution sources.
- A strategic water quality monitoring plan with designated locations.
- A functional protocol for online monitoring and data management.
- Evidence-based recommendations for intervention and policy formulation to enhance the river's resilience and water security for Metro Dhaka.
- Assessment of the pollution load of 173 polluting industries surrounding the Turag River and a detailed technical specification for 173 real-time online monitoring systems.

✓ **Key Deliverables (Common)**

Deliverable	Timeline
Inception Report	Month 3
Interim Report and Preliminary Designs	Month 6
Draft Final Report & Final Design	Month 8
Final Report	Month 10

✓ **Duration of Assignment:** 12 months**,** from contract signing

✓ **Reporting and Coordination:**

- Consultant will submit individual reports at different agency and each agency will verify, approve and send comments to PD, LGD.
- Consultant will report to the Project Director (Joint Secretary, Planning Branch-1, LGD).
- Consultant will coordinate regularly with PIUs of DWASA, DNCC, DSCC, NCC and DoE.
- Reports will be reviewed by LGD, with feedback from World Bank and other stakeholders.
- All reports shall be submitted in both hard copy and editable digital formats (in English).