

Government of the People's Republic of Bangladesh
Bangladesh Economic Zones Authority (BEZA)
Prime Minister's Office
Biniyog Bhaban, Agargaon (Level-7,8,9), Dhaka-1207
www.beza.gov.bd

Memo No: 03.07.0000.108.07.004.2024-875

Date: 28/02/2024

Request for Expression of Interest (EOI)

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| | Description: | |
| 1. | Ministry | : Prime Minister's Office |
| 2. | Agency | : Bangladesh Economic Zones Authority (BEZA) |
| 3. | Procuring Entity | : Manager (Planning-7), Bangladesh Economic Zones Authority (BEZA) |
| 4. | Title of Service | : Consultancy Service for Detailed Engineering Design of Road, Intersection, Bridge with Traffic & Transportation Management for Sheikh Mujib Shilpa Nagar (BSMSN) |
| 5. | Procuring Entity District | : Dhaka (BEZA HQ) |
| 6. | EOI for Selection of | : A consultancy firm to prepare Detailed Engineering Design of Road, Intersection, Bridge with Traffic & Transportation Management for Sheikh Mujib Shilpa Nagar (BSMSN) in Chattogram |
| 7. | EOI Ref. No | : PS01- BEZA-2024 |
| 8. | EOI Publication Date | : 29 February 2024 |
| | Key Information: | |
| 9. | Procurement Method | : Quality and Cost Based Selection (QCBS) (National) |
| | Funding Information: | |
| 10. | Budget and Sources of Funds | : BEZA Own Fund |
| 11. | Development Partner (if applicable) | : None |
| | Particular Information: | |
| 12. | Project/Program Code | : Not Applicable |
| 13. | Project/Program Name | : Not Applicable |
| 14. | EOI Closing Date & Time | : 25 March 2024 at 2.00 PM |
| | Information for Applicant: | |
| 15. | Brief Description of the Assignment | : The service includes but not limited to: • Identify and finalize Employers Requirements; • Carryout necessary engineering survey & investigation, Preparation of Detailed Engineering Design of Road, Intersection, Bridge with Traffic & Transportation Management; and • Preparation of Rough cost estimates and BoQ |
| 16. | Experiences, Resources, & Delivery Capacity Required | |
| | a) Qualification and Experiences | : i) Minimum 15 (fifteen) years of general experience in the role of Consulting Firm from its years of incorporation (in case of JV, each member shall meet the requirement). ii) Minimum 10 (ten) years specific experience and 2 (Two) similar assignments within the last 10 (ten) years under consultancy contract related to preparation of international bidding and contract documents in the role of Prime Consultant (In case of JV the lead partner must have at least 1(one) similar assignment). |
| | b) Expected Team Composition | : Team Leader, Road Design Specialist, Urban Planning Expert, Geotechnical/ Foundation Engineer, Road Safety Engineer, Transport Expert, Drainage Design Expert, Environment & Climate Change Expert and Structural Engineer. |
| | c) Mandatory documents | : Certificate of Incorporation, Trade License, TIN, Latest Tax Return Certificate and VAT Registration. |
| 17. | Contract Execution Period | : The duration of the contract is expected to be 8 (Eight) Months. |
| 18. | Other Details (if applicable) | : As stated in TOR |
| 19. | Association with Foreign Firm | : Not required but an international consulting firm can join in the consortium as JV partner |
| 20. | Package Details | |
| | Ref./Package No. | Location Indicative Start Indicative Completion |
| | PS01-BEZA-2024 | Dhaka (BEZA HQ) June 2024 February 2025 |
| | Procuring Entity Details: | |
| 21. | Name & Designation of Official Inviting EOI | : Msmt. Sabrina Sarmin Manager (Planning-7) |

| | | | |
|-----|--|---|---|
| 22. | Address of Official Inviting EOI | : | Bangladesh Economic Zones Authority (BEZA) Prime Minister's Office Biniyog Bhaban, Agargaon (Level-7,8,9) Dhaka-1207, Bangladesh |
| 23. | Contact Details of Official Inviting EOI | : | Phone: +(88) (02) 44826043 E-mail: ssabrina_tnt@yahoo.com |
| 24. | Particular Instruction: | : | <ul style="list-style-type: none"> The Procuring Entity reserves the right to accept or reject any or all EOIs for any reason whatsoever; Consultant will be selected in accordance with the procedure set out in Public Procurement Act 2006 and Public Procurement Regulations 2008; This EOI notice is also available in www.dgmarket.com as well as BEZA website www.beza.gov.bd and CPTU website www.cptu.gov.bd ; The list of required documents to be submitted with application and detailed Terms of Reference (TOR) are available on the website www.beza.gov.bd. The consultant must provide information indicating that they are qualified to perform the services by providing Brochures, description of similar assignments, experience in similar operating conditions, availability of appropriate professional qualification and experience among staff, logistics & annual turnover, etc. |
| 25. | Shortlist Criteria | : | <ul style="list-style-type: none"> Firm registration as consulting services, core business; Specific experience of the Consultant relevant to the assignment; Professional staff qualifications and competence for the assignment Managerial and organizational capabilities Firm similar experience in Bangladesh and regional countries. |



Msmt. Sabrina Sarmin
(Deputy Secretary)
Manager (Planning-7)
Bangladesh Economic Zones Authority

Terms of Reference (TOR)

for

Consultancy Services for Detailed Engineering Design of Road, Intersection, Bridge with Traffic & Transportation Management Plan for Bangabandhu Sheikh Mujib Shilpa Nagar (BSMSN)

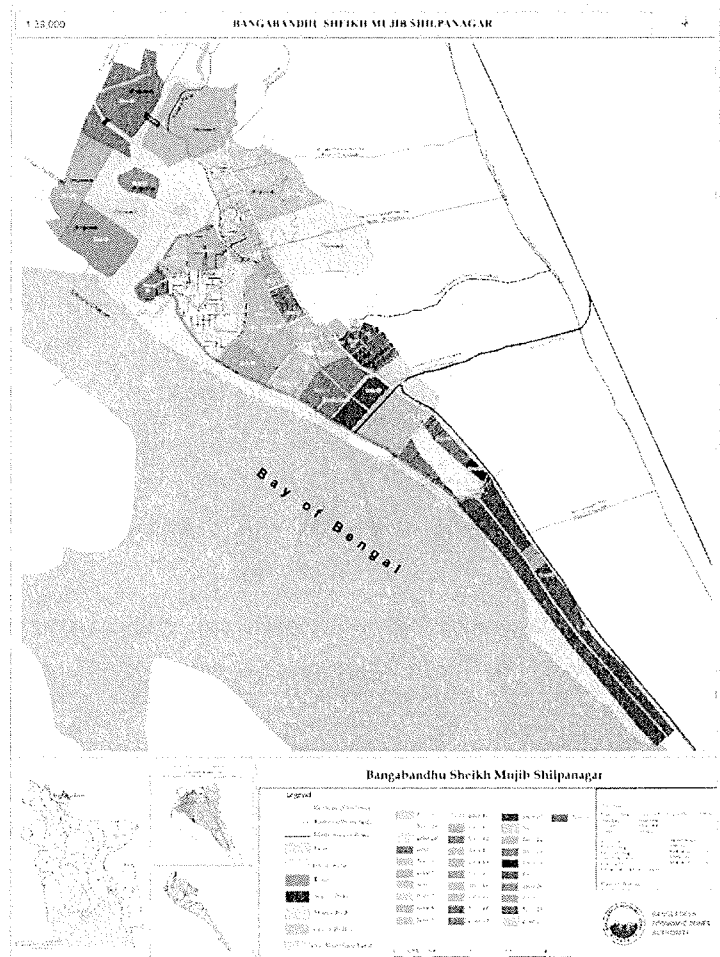
1. Background

BEZA is providing the overall framework for establishing Economic Zones (EZs) throughout Bangladesh under BEZA Act-2010. BEZA aims to establish economic zones in all potential areas in Bangladesh including backward and under developed regions with a view to encouraging rapid economic development through increases and diversification of industry, employed, production and export.

One of the biggest EZs, being implemented by BEZA is the Bangabandhu Sheikh Mujib Shilpa Nagar (BSMSN) located Mirsarai and Sitakunda Upazilla in Chittagong and Sonagazi in Feni District. The BSMSN is located 200 kilometers (km) from Dhaka, 60 km from Chattogram, 70 km from Chattogram Port and the Shah Amanat International Airport and 330 km from Sylhet, which accommodate large-scale, multi-zone development containing Public, Private and Foreign Direct Investment. Area of Bangabandhu Sheikh Mujib Shilpa Nagar (BSMSN) is about 30,000 acres in size.

With increasing multidimensional activities in

“Bangabandhu Sheikh Mujib Shilpa Nagar” area, traffic movement is growing fast. Effective and efficient EZ depends on well “Road Network and Traffic Management System”. According to the BSMSN master plan, 8 percent Road coverage exist in BSMSN. Assessment of Traffic Generation, Traffic Volume, Mode of Transport, Level of Service, Traffic flow management, Trip Distribution etc. are essential in BSMSN. Considering the above mentioned issues, there is a need to develop a free, dynamic and uninterrupted transport system in Bangabandhu Sheikh Mujib Shilpanagar by formulating and implementing a complete Traffic Management Plan.



Now, BEZA seeks Consultancy Services for Detailed Engineering Design of Road, Intersection, Bridge with Traffic & Transportation Management Plan for Bangabandhu Sheikh Mujib Shilpa Nagar (BSMSN).

2. Project Location

The Bangabandhu Sheikh Mujib Shilpa Nagar (BSMSN), BEZA's largest economic zone is located in Mirsharai Upazilla of Chattogram and Sonagazi Upazilla of the Feni District. The BSMSN is located 200 kilometers (km) from Dhaka, 60 km from Chattogram, 70 km from Chattogram Port and the Shah Amanat International Airport and 330 km from Sylhet. BSMSN has a total land area of 33,805 acres or 136.86 square kilometers (km²).

3. Objective of the Assignment

The main objective of this assignment is to provide Engineering Design of Road, Intersection and Bridge with Traffic & Transportation Management Plan for free, dynamic and uninterrupted transport system in BSMSN.

The specific objectives of the Consultancy services are as follows:

- a) Survey and investigations of traffic, soil, topography, and all necessary data required;
- b) Find out particular design components like Road (Collector/Sub-Arterial/Arterial), Bridges including approach, Rail, Drain, Khal and major intersections areas;
- c) Traffic load calculations based on domestic and industrial usage;
- d) Parking facilities calculations and locations;
- e) Engineering design in details and preparation of documents;

4. Scope of Services

The scope of the services to be provided by the consultants will include, but not necessarily be limited to, the following tasks:

Task 1: Surveys, Investigations and Studies

Task 1.1: Reconnaissance survey

Site reconnaissance and general condition for the project Influence area including-

- Land use survey
- Traffic characteristic
- Condition of existing surface drainage

✓ **Deliverables-1: Inception Report. A list of all meetings and interviews with meeting notes and another list of studies and documents examined, well-defined timeline of agreed upon tasks and responsibilities and work plan will be provided to BEZA.**

Task 1.2: Topographic Survey

- Topographic Survey for the whole Project influence area including Collector Road, Sub-Arterial Road, Arterial Road, Super dyke, Bridges, Drain, Khal and major intersections areas, walkways/footpath.

- Plans of the Project area showing existing roads, Rail, River, Bridge, Super dyke, Drain and land-use.
- Ground elevation and elevations of existing road and structures.
- Details of existing and future public services and utilities, etc.

Task 1.3: Traffic & Transport Assessment

- Volume, type and direction of traffic flow, traffic lanes, signal system, obstruction, accidents and Origin-Destination (O-D) survey.
- The consulting team will review existing transport networks that will support the EZ development. A critical assessment of existing conditions, potential opportunities and constraints should be identified, and a list of recommended transport infrastructure and networks should be highlighted in order to optimize location for multi-modal transport platform. The consulting team will also conduct Traffic Volume Study for calculating Traffic Generation in the proposed EZ.
- Present and Future traffic Projection in and around EZ with specific reference to proposed marine drive way and approved project for construction of 4-lane roads from Mirsarai to Lakshmipur of RIID.
- Compare/harmonize with Govt. multimodal/higher level plan like R&D, WRM, UDD, LGED etc.

Task 1.4: Geotechnical Investigations

Any investigation and laboratory tests that may be necessary for design of the entire Project components following International/National standards guideline.

- Develop a sampling and testing plan for the project in coordination with the engineer concerned.
- Carry out the exploratory drilling in the area to gather information on the soil properties.
- Prepare boring logs containing a record of the subsurface conditions and ground water levels encountered.
- Collection, protection and preservation of disturbed and undisturbed soil sample; and
- Perform laboratory tests to complete the geo-technical analyses and interpretations as required.
- All tests and reporting shall be done following BNBC guideline with specific reference to liquefaction.
- Bathymetric survey of Canal and River where Bridge are proposed.

Task 1.5: Hydrological and Morphological Investigation

- Analyse the Hydrological and Morphological studies including the data collection of the khal system, flow analysis. The consultant will carry out additional studies (if required) for preparation of detailed design of the project components.

Deliverables-2: Surveys Report. Result of Topographic Survey, Traffic & Transport Assessment, Geotechnical Investigations, Hydrological and Morphological Investigation.

Task 1.6: Data Collection

- Data related regulations, laws, by-laws, and codes of practice in force in the People's Republic of Bangladesh.
- Data related to roads, buildings, utilities of other ongoing or planned projects in the project influence area.
- Data related to availability and cost of construction materials in the Project area.
- Review and verify all available primary and secondary data collected during preparatory survey for the projects.
- Any other data relevant to the projects.

Task 2: Preliminary Engineering Design

The Consultant should have required Preliminary Engineering Design with consideration of all investigations, surveys and studies.

The design should include but will not be limited to the following:

- Selection of the Alignment/Right of way of Road, Road Structures, Intersections, Bridge, Overpass, Underpass etc.
- Selection of the Alignment of Drain and relevant feature.
- Selection of the Alignment of Rail and relevant feature.
- Utility plan within the Road corridor.
- Construction methods.

Consultant shall Prepare Preliminary Design of Road, Road Structures, Intersections, Bridge, drain, etc. identified by the Consultant.

✓ ***Deliverables-3: Submission of Traffic & Transportation Plan. Plan and proposals of Road, Road Structures, Intersections, Bridge, drain, etc.***

Task 3: Detailed Engineering Design

Based on the Preliminary Design approved by the Employer the Consultant is required to complete the Detail Engineering Design and Cost Estimate for all the Components as outlined in the following:

- a) Future traffic forecast for the next 20 years. All traffic (light, medium and heavy vehicles) forecasts shall be given at three growth rates, namely; low, medium and high.
- b) Preparing the master plan network through network capacity and future demand.
- c) Preparing detailed engineering design of Road, Bridge, Overpass, approach road, culvert, underpass, Drainage system, safety measures, and any identified relevant component.
- d) Prepare the detailed design of all components in sufficient detail to ensure clarity and understanding by BEZA and other relevant stakeholders. The detailed design will include construction drawings, detailed cost estimates, necessary calculations. The

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detailed design shall be prepared in close consultation with, and to meet the requirements of BEZA.

- e) Prepare designs based on the typical pavement sections, using some standards and guidelines like RIID design manuals, AASTHO design guideline. Road Note, and other international standards as appropriate etc. and sound engineering practices with giving due regard to environmental aspects.
- f) Prepare the detailed engineering design for the new structures or improvement of inadequate structures.
- g) Prepare engineering drawings, including road plans, longitudinal profiles, cross-sections, structure plans and other relevant requirements.
- h) Road equipment like Traffic signs, road markings, culverts, pedestrian and safety plans shall be fully designed and shown on the drawings.
- i) Identify all possible accident black spots (existing and potential in the future) and incorporate them within their design measures to improve any dangerous locations identified.
- j) Improve layout and visibility at junctions, proper separation of pedestrians and cyclists from the vehicular traffic and provide safe pedestrian crossings, bus bays, parking areas and lay bays at appropriate intervals.
- k) Prepare options to ensure road safety to non-motorized (e.g. pedestrian and cycling) uses of the road.
- l) Prepare detailed engineering design of street lighting for entire road network.
- m) There should be provision for detailed design of intersections required for traffic management.
- ✓ n) Provision for Road Safety Audit and iRAP study should include. The designed road must be of at least 'three star' category
- o) Prepare plan on Smart traffic monitoring, control and management system and it's connectivity the proposed Analytics Data Command and Control Center (ADCC) of BSMSN.
- p) Designing modern road connectivity with the existing and proposed national highway with special attention to the existing connectivity with Dhaka-Chattagram highway at Borotakia point. This should include details of Bus/Truck/Light vehicle Terminal and parking etc. ITS of BSMSN should be aligned with the ITS system of Dhaka-Chittagong Highway. ✓

✓ ***Deliverables-4: Submission of Preliminary design & Report. Preliminary design of Road (Collector/Sub-Arterial/Arterial), Bridges including approach, Overpass, Rail, Drain, Khal, major intersections areas and 3D.***

✓ ***Deliverables-5: After getting feedback from BEZA. The consulting firm will deliver final design and costing incorporating all the comments.***

5. Deliverable and Timeframe

The following table identifies key deliverables and timeframes for the Study.

| SN | Deliverables | No. of Copies and Format | Period of Submission |
|----|---|---|------------------------------|
| 1. | Inception Report | 10 Copies | End of 2 nd Month |
| 2. | Surveys Report | 10 Copies (including AutoCAD, PDF & GIS drawings); Presentation | End of 4 th Month |
| 3. | Submission of Traffic & Transportation Plan | 10 Copies (including AutoCAD/ GIS drawings) | End of 5 th Month |
| 4. | Submission of Preliminary design with Report of Road (Collector/Sub-Arterial/Arterial), Bridges including approach, Overpass, Rail, Drain, Khal and major intersections areas. | 10 Copies (including AutoCAD, PDF & GIS drawings); Presentation | End of 6 th Month |
| 5. | Submission of Final design with Report (Collector/Sub-Arterial/Arterial), Bridges including approach, Overpass, Rail, Drain, Khal and major intersections areas) with 3D and Cost Estimate (BoQ). | 10 Copies (including AutoCAD, PDF & GIS drawings); Presentation | End of 8 th Month |

Note: All deliverables must be accomplished by both hard copy and soft copy.

6. Payment Schedule

The contract type will be treated as lump-sum contract and the following mile-stone payment schedule will be carried out against assignment during conducting the study that directly linked to key identified deliverables as follows:

| SN | Deliverables | Payment (% of amount) |
|----|------------------------------------|--------------------------|
| 1. | Inception Report | 10% |
| 2. | Survey Report | 20% |
| 3. | Traffic & Transportation Plan | 20% |
| 4. | Submission of Preliminary Design | 20% |
| 5. | Submission of Final Design with 3D | 30% |



| SN | Deliverables | Payment (% of amount) |
|----|--------------------------|--------------------------|
| | and Cost Estimate (BoQ). | |

Note: All payments will be made only after accepting each deliverable by the Authority.

7. Indicative Required Experts

A. Man-Month of Required Experts

| SN | Position | No | MM |
|-----------------------|-------------------------------------|-----------|-----------|
| Key-Expert | | | |
| 1 | Team Leader | 1 | 8 |
| 2 | Road Design Specialist | 1 | 6 |
| 3 | Urban Planning Expert | 1 | 4 |
| 4 | Geotechnical/Foundation Engineer | 1 | 2 |
| 5 | Road Safety Engineer | 1 | 2 |
| 6 | Transport Expert | 1 | 4 |
| 7 | Drainage Design Engineer | 1 | 3 |
| 8 | Environment & Climate Change Expert | 1 | 3 |
| 9 | Structural Engineer | 1 | 4 |
| Sub-Total | | 9 | 36 |
| Non Key-Expert | | | |
| 1 | Surveyor (topographic) | 1 | 2 |
| 2 | GIS and Remote Sensing Assistant | 1 | 2 |
| 3 | Junior Engineer | 4 | 16 |
| 4 | Auto CAD Expert | 2 | 12 |
| Sub-Total | | 8 | 32 |
| Total | | 17 | 68 |

N.B: The Consultant may offer/include/change non-key to furnish this assignment/task. Further note that the additional proposed key experts will not be considered for evaluation purpose for selecting the consulting firm.

B. Qualification and Experience of the Experts

The team members should comprise with the following educational qualifications, experiences and competencies:

| SN | Position | Relevant Experience and Qualification |
|-------------------|-------------|--|
| Key-Expert | | |
| 1 | Team Leader | <ul style="list-style-type: none"> — Bachelor's degree in Civil engineering, post- graduate degree in transport engineering preferred. — Min. 25years of professional experience — Min. 15 years' experience in planning, design &/or Construction supervision of highway and bridge projects in government sector. |

| SN | Position | Relevant Experience and Qualification |
|----|-------------------------------------|--|
| | | <ul style="list-style-type: none"> Minimum 5 years' experience as Team leader in similar nature of works. Experience in Road, Drain, Bridge design preferred. |
| 2 | Road Design Specialist | <ul style="list-style-type: none"> Bachelor's degree in civil engineering, post- graduate degree preferred. Min. 18 years of professional experience Min.12 years of experience as Road design, Pavement and Transportation and Traffic Management. |
| 3 | Urban Planning Expert | <ul style="list-style-type: none"> Master Degree in Physical Planning, Urban, Regional Planning or similar Minimum 15 years general experience in the Consultancy Services Minimum 10 years specific experience in the Master Plan Projects. Experience in GIS data management. |
| 4 | Geotechnical/Foundation Engineer | <ul style="list-style-type: none"> Bachelor's degree in Civil/Geotechnical engineering, post- graduate degree preferred. Min. 18 years of professional experience in related field. Min. 12 years of design experience as Geotechnical/foundation engineer in highways and bridge projects. |
| 5 | Road Safety Engineer | <ul style="list-style-type: none"> Bachelor's degree in degree in Civil Engineering. Postgraduate qualifications in Transport Engineering will be an added advantage. At least 15 years of cumulative experience in the road transportation sector. Must have 10 year's experience in road safety improvements, road safety audits/design and construction. |
| 6 | Transport Expert | <ul style="list-style-type: none"> Master degree in Transport Planning/Engineering. At least 15 years of cumulative experience in the road transportation sector. Must have 5 year's experience in Transport Planning. |
| 7 | Drainage Design Engineer | <ul style="list-style-type: none"> Bachelor's degree in Civil Engineering or similar. Having 15 years relevant general experiences. Must have 10 year's experience in plan, design, operation, management and supervision of Drainage structures. |
| 8 | Environment & Climate Change Expert | <ul style="list-style-type: none"> Bachelor's Degree in Environmental Engineering /Environmental Science/Environmental Management or relevant subject. Post Graduate Degree is Preferred. Min.15 years of professional experience in related held. |

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| SN | Position | Relevant Experience and Qualification |
|-----------------------|----------------------------------|---|
| | | <ul style="list-style-type: none"> Min. 10 years of experience as Environmental Engineer for similar bridge/road projects. |
| 9 | Structural Engineer | <ul style="list-style-type: none"> Bachelor's degree in Civil Engineering or similar. Post-graduate qualification will be added advantage. Min. 15 years of professional experience in related held. Min. 10 years of experience in planning and design works of physical infrastructure (roads, bridges, culverts, drain etc.). |
| Non-Key-Expert | | |
| 1 | Surveyor (topographic) | <ul style="list-style-type: none"> Diploma in surveying/civil engineering or similar Min. 8 years of professional experience in related field. Min. 5 years of experience in topographic survey works. |
| 2 | GIS and Remote Sensing Assistant | <ul style="list-style-type: none"> Bachelor's degree in Geography/Urban Planning or similar Min. 5 years of professional experience in related field. Min. 3 years of experience in GIS and Remote Sensing related works. |
| 3 | Junior Engineer (4 nos.) | <ul style="list-style-type: none"> Bachelor's degree in Civil engineering' Min. 5 years of professional experience in related field. Min. 3 years of experience in Road/Drain/Bridge projects. |
| 4 | Auto CAD Expert | <ul style="list-style-type: none"> Diploma in Civil Engineering/ Diploma in Architecture/ equivalent from any Government accredited Institute. Min. 8 years of professional experience in related field. Min. 5 years of experience in performing all type of drawings of Road/Drain/Bridge etc. through AutoCAD. |

C. Supporting Staff

The consultant team may employ supporting staff to conduct the study, if required. The supporting staff may include data collector, administrator, accountant, typist, estimator, AutoCAD operator, surveyor etc.

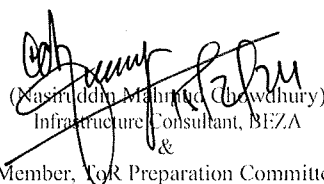
8. Duration of the Assignment

The duration of the assignment will be 8-month time period. However, the time duration may be extended from the agreed time period without any cost escalation of agreed contract value.

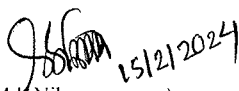
N.B: This Terms of Reference (ToR) may review/update further (if required).



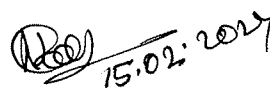
(Bivash Das)
Sr. Urban Planner, BEZA
&
Member, ToR Preparation Committee



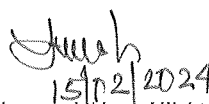
(Nasiruddin Mahmud Chowdhury)
Infrastructure Consultant, BEZA
&
Member, ToR Preparation Committee



(Md. Nikaruzzaman)
Deputy Manager (Planning), BEZA
&
Member Secretary, ToR Preparation Committee



(Abu Taleb Chowdhury)
Executive Engineer, BEZA
&
Member, ToR Preparation Committee



(Mohammad Ahsan Ullah)
Manager
(Planning -2/BSMSN), BEZA
&
Chairman, ToR Preparation Committee