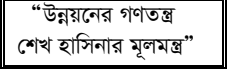


**Government of the People's Republic of Bangladesh  
Local Government Engineering Department  
Program for Supporting Rural Bridges (SupRB)**



**Agargaon, Sher-E-Bangla Nagar, Dhaka-1207**

[www.lged.gov.bd](http://www.lged.gov.bd)

Memo No. 46.02.0000.927.07.006.19.194

Date: 31 /03/2019

**REQUEST FOR EXPRESSIONS OF INTEREST  
(CONSULTING SERVICES–FIRMS SELECTION)**

**Country: Bangladesh**

**Name of Project: Program for Supporting Rural Bridges (SupRB)**

**Credit No: 6332-BD**

**Assignment Title: Maintenance Consultancy Firm (SD 12)**

The People's Republic of Bangladesh has received financing from the World Bank toward the cost of **Program for Supporting Rural Bridges (SupRB)**, and intends to apply part of the proceeds for consulting services.

The primary objective of the Maintenance Consultancy (MC) Service is to support the PMU, PIU, the district and the Upazila level officials of LGED, and prepare & monitor the implementation of long and medium long-term sustainable maintenance plans and works programs of rural bridges.

The Consultants services will be commenced on around September 2019. Duration of assignment will be 48 (forty eight) months. The detailed Terms of Reference (TOR) for the assignment can be obtained from [www.lged.gov.bd](http://www.lged.gov.bd) or can be obtained at the address given below.

The Local Government Engineering Department (LGED) now invites eligible consulting firms ("Consultants") to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services. The shortlisting criteria are:

- (a) General experience of the Firm(s);
- (b) Experience in similar projects of compatible size, complexity and technical specialty in the required area;
- (c) Financial soundness of the firm; and
- (d) Staffing and logistics of the firm.

Consultants are requested to submit the following supporting documents in support of the above-mentioned criteria:

- (a) Registration paper of the firm(s);
  - (b) JV agreement/letter of intent (if applicable);
  - (c) Firm's brochure;
  - (d) Audited financial reports for last three years;
  - (e) service experience record (including nature, total cost, total input in terms of man month, employer, location of service etc.).
- Key Experts will not be evaluated at the shortlisting stage.

The attention of interested Consultants is drawn to Section III, paragraphs, 3.14, 3.16, and 3.17 of the World Bank's "Procurement Regulations for IPF Borrowers" July 2016 (Revised November 2017) ("Procurement Regulations"), setting forth the World Bank's policy on conflict of interest.

Consultants may associate with other firms to enhance their qualifications, but should indicate **clearly whether the association is in the form of a joint venture and/or a sub-consultancy**. In the case of a joint venture, all the partners in the joint venture shall be jointly and severally liable for the entire contract, if selected. It is preferable to limit the maximum number of firms will be 04 (four) in an association including the Lead Firm.

A Consultant will be selected in accordance with the Quality and Cost Based Selection (QCBS) method set out in the Procurement Regulations.

Further information can be obtained at the address below during office hours. Expressions of interest must be delivered in a written form to the address below (in person, or by mail) by 06/05/2019 upto 2:30 PM (Bangladesh Standard Time).

**(A.K. Azad)**

Project Director (SupRB)

&

Additional Chief Engineer (Maintenance)

Local Government Engineering Department (LGED)

LGED Bhaban, Level –7, Agargaon, Sher-e-Bangla Nagar

Dhaka-1207, Bangladesh.

Tel: 02-8142651

E-mail: [ace.maintenance@lged.gov.bd](mailto:ace.maintenance@lged.gov.bd)

Copy forwarded for kind information and necessary action:

1. Chief Engineer, Local Government Engineering Department, Agargaon, Dhaka.
2. Director General, CPTU, IMED, Planning Commission, Agargaon, Sher-E-Bangla Nagar, Dhaka. He is requested to publish the EOI in CPTU website.
3. Additional Chief Engineer (Implementation/ Maintenance/Planning/Urban Management/ IWRM), LGED, Dhaka.
4. Superintending Engineer (ICT), LGED. He is requested to publish the EOI in LGED website.
5. Senior Assistant Secretary (Dev.), Local Government Division, Dhaka.
6. The Manager (Advertisement), The Dhaka Tribune / Dainik Kaler kantha. He is requested to publish the attached EOI once in his daily on or before 01/04/2019 and submit 05 (five) copies of the same to the PMU, SupRB.
7. Mr. / M/S. ....

***GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH***

MINISTRY OF LOCAL GOVERNMENT RURAL DEVELOPMENT AND  
COOPERATIVES

***LOCAL GOVERNMENT ENGINEERING DEPARTMENT***

Program for Supporting Rural Bridges (SupRB)

**TERMS OF REFERENCE (TOR)**

**Of**

**Maintenance Consultancy (MC) Service  
For SupRB  
(Package No. SD-12)**

**February 2019**



**Government of the People's Republic of Bangladesh  
Local Government Engineering Department  
Program for Supporting Rural Bridges (SupRB)**

**Terms of Reference (ToR)  
for  
Maintenance Consultancy (MC) Service**

1. Bangladesh is a densely populated country and more than 70% of the people live in the rural areas. To access different social and economic centers and settlements, an extensive rural road network has been developed. The total road network size of the country is roughly 375,000 km. This is equivalent to a road density of approximately 250 km per 100 sq. km. The total rural road network comprises just over 350,000 km (94% of the network). Upazila roads (UZRs) and Union roads (UNRs) compose of respectively 11% and 12% of the rural road network. Over a quarter (30%) of the rural road network is paved, with 89% and 70% of the UZRs and UNRs, respectively, are paved. At present, only 23.89% of all rural roads in the Bangladesh are of acceptable quality, while 26.19% are in fair condition and in need of resealing, 22.76% are in poor condition and in need of rehabilitation and 27.17% are in bad condition and in need of upgrading.

2. The current inventory envisages that a bridge is required for every 4.5km of UZRs and UNRs. Over four-fifths of these gaps now have structures, leaving a fifth of them to be bridged. But formerly, the Government did not have any dedicated bridge construction and maintenance program. In addition, none of the Development Partners were involved in rural bridge maintenance and rehabilitation activities. To address this situation, the Local Government Engineering Department (LGED) has launched the premeditated initiative to improve the quality of the local road network through the countrywide Rural Roads and Culvert Maintenance Program' as well as been strengthening the governance processes so that field officials of LGED are themselves able to effectively plan, design, implement and maintain their road networks.

3. Due to a shortage of funds, a significant backlog exists in the maintenance of bridges on rural roads. Although the rural road maintenance budget has steadily increased in the last ten years, it remains insufficient to cover the entire maintenance needs of roads and bridges. In this context, the Government of Bangladesh has received a Credit from the World Bank (WB) toward the cost of the program titled "Program for Supporting Rural Bridges (SupRB)".

4. The program will be implemented by the Local Government Engineering Department (LGED) through the Program Director's Office/program management unit (**PMU**) set up at the headquarter level. The PMU will



be assisted by program implementation unit (**PIU**) which will be set up at regional level. The contract administration of civil works will be carried out by LGED **District/Upazila** offices.

5. The program will be implemented in total 61 districts out of 64 districts of the country, excepting the three hill districts. The World Bank has committed to contribute to reducing the maintenance backlog of rural bridges by providing support to the proposed Program for Supporting Rural Bridges (SupRB).

6. The SupRB program components include: Major and minor maintenance of 85,000 meters of bridges, rehabilitation of 24,000 meters of bridges, Capacity Expansion (widening) of 5000 meters of rural bridges, replacement or newly construction of 20,000 meters of bridges, technical, fiduciary, procurement, social and environmental capacity improvement of LGED including design and implementation of climate resilient bridges, and establishment and operationalize of Grievance Redress System (GRS). The bridge is identified in the prioritized annual work plan generated through the Rural Bridge Information Management System (RuBIMS). This program will provide continuous connectivity between agricultural production areas, growth centers and rural markets located in the program area and enhance earnings opportunities creating uninterrupted access to the commercial institution and basic services like health and education of the rural poor. The impact of the program will be reduced poverty in the intervention area.

7. The Program will also support the LGED's strategy for the sustainable development and maintenance of rural bridges. The main strategic elements include undertaking the creation of new bridge assets and the preservation of existing assets comprehensively to enhance and preserve rural connectivity, objective and competitive selection of rural bridge interventions under budget constraints that will ensure an optimum balance between creation and preservation of assets; replacing rural bridges that surpassed their economic lives and making unsafe bridges safer; and improving institutional capacity and core business processes including the creation of a Rural Bridge Information and Management System (RuBIMS) to help in informed rural bridge decision making to aid in the planning, design, construction, and management of bridges sustainably. The SupRB program is being implemented by a Project Management Unit (PMU) in LGED, in co-operation with the PIU, district and the Upazila level officials of LGED.

8. LGED intends to procure consultancy services at the regional level to support the implementation activities under the Program in an efficient manner and establishing a strong source to collect authentic data creating a framework of LGED's Asset Management to achieve the desired output of the Program. In this regard, LGED wishes to use some of the resources available under the Program to engage a consultant team, the team will be based at LGED headquarters at Dhaka [but they will visit the sites as and when required](#).

9. The Dhaka-based consultants will together form the Road and Bridge Maintenance Coordination Team. The Road and Bridge Maintenance Coordination Team members will work closely with the respective LGED regional offices and will be fully embedded in the LGED teams.

## Objective of the Service:

10. The primary objective of the Maintenance Consultancy (MC) Service is to support the PMU, PIU, the district and the Upazila level officials of LGED, and prepare & monitor the implementation of long and medium long-term sustainable maintenance plans and works programs.

## Scope of Service

11. The scope of the services is to provide high quality professional advice and management and implementation support to the client to effectively implement the Program. The overall scope of Maintenance Consultancy (MC) services shall be as indicated herein [and detail described in the positioned-based task specified for each positioned](#) but not limited thereto.

- Assisting the PMU in preparing and implementing program activities, including planning, scheduling, procurement of works, goods and services, setting methodologies, execution and training for sustainable operations and maintenance of improved infrastructure, as well as operating the quality control regime;
- Assisting the PMU in planning, monitoring, reporting and managing finances, including program framework techniques for planning, training and financial monitoring of implementation;
- Assisting and advising the PMU in all aspects of procurement, including evaluation of bids/proposals for goods and works, and contract awards;
- Supporting in field supervision of civil works, evolving and implementing procedures for regular on-site checking, quality control, testing and monitoring of work execution and construction methods;





- (e) Assisting the PMU and PIU in approving and/or issuing working drawings, approving the setting out of the works, and giving instructions to the Contractor;
- (f) Assisting the PMU and PIU in reviewing the Quality Assurance Plans and Programs of the Contractor, Approving the contractor's work program, method statements, material sources, Checking and certifying as-built drawings in the works prepared by the Contractors, Accepting or rejecting any part or parts of the completed works etc.;
- (g) Inspecting and testing all the materials and the works to ensure compliance with specifications and giving immediate notice to the Contractor in the event that such materials and works fail to comply with the specifications;
- (h) Certifying payments to contractors and completion procedures and develop procedures for laboratory and field tests for materials quality control, LGED materials laboratories operation, and certification of quality and work progress;
- (i) Assisting the Program Management with the maintenance of consolidated program accounts, and with preparation of financial statements and withdrawal applications for submission to WB;
- (j) Review the preliminary designs of the periodic maintenance, overlay, rehabilitation, reconstruction and pavement widening projects;
- (k) Review the standard designs of LGED and suggest any modifications if required;
- (l) Provide quality assurance services regarding pavement, assets condition surveys, traffic count and axle load surveys. When needed the PMS will prepare tender documentation for further pavement analysis and engineering assignments, review EOs;
- (m) Develop design specifications for XENs and PDs for periodic maintenance, rehabilitation, reconstruction and pavement widening projects;
- (n) Prepare training documents for LGED officials, national consultants and contractors that may in the future work on pavement maintenance. These trainings may include activities but are not limited to condition monitoring, (non-) destructive testing, PMS application, designing repair, rehabilitation and reconstruction options and manage their implementation;
- (o) Advise on any modifications or additions required to standard designs and technical specifications used by LGED in order to meet project requirements, and prepare design standards for innovative activities;
- (p) Prepare and operate monitoring plan and reporting system on the performance of planned improvement and upgrading of roads in the project area;
- (q) Assisting and advising the PMU and PIU in Contract Administration, cost estimate preparation;
- (r) Periodically checking the remaining quantities, and undertaking constant monitoring of each contract costs;
- (s) Reviewing and recommending to the Program Management variation orders, extensions of time, claims, and other matters that may come from Contractors;
- (t) Negotiating with the Contractors and recommending to Program Management the rates for any unscheduled items of work that may arise;
- (u) Advising the Program Management on all matters relating to the execution of the works and assisting it in processing the Contractor's possible claims;
- (v) Ensuring compliance with the environmental and social safeguards requirements of civil works contracts, and providing information to WB on those processes in the monthly progress reports;
- (w) Conducting monitoring visits to ensure proper implementation of the EMP;
- (x) Updating EMP based on changing field conditions and accordingly inform the relevant agencies and field staffs;
- (y) Prepare semi-annual monitoring reports on the implementation of safeguards for review and approval by LGED and published on LGED website;
- (z) Undertaking program performance management system in the format acceptable to the Client;
- (aa) Assisting in preparing a consolidated program completion report in a prescribed format approved by LGED after the completion of Contract works;
- (bb) Providing the Client with complete records such as inception, monthly, quarterly, completion reports, etc.;
- (cc) Introduce/incorporate new design principles for climate change resilient road and bridges;



- (dd) Ensure that adequate and current safety standards are reflected and maintained in all construction and survey equipment and ensure that relevant document to that effect are generated and stored;
- (ee) Develop, implement, and manage fleet maintenance plans designed to ensure fulfillment of program goals and obligations to include, but not limited to, safety, cost, quality, and compliance;
- (ff) Maintain an inventory of all equipment upon initial receipt and/or final turn-in inspections;
- (gg) Develop and implement a formal construction equipment operation/ safety training program;
- (hh) Conducting on-site training where required for LGED field staff on Quality Assurance and Contract Administration;
- (ii) Monitoring the implementation of climate change adaptation measures during the construction stage and advising LGED and the Contractor of the remedial measures as necessary;
- (jj) Conducting training for LGED staff on climate change adaptation measures and its implementation methods for road construction and maintenance works. This training should be in principle based on the consultant's assessment of existing design standards in Bangladesh, but new design standards for the country should be introduced such as incorporation of future programed climate conditions into the road and bridge designs;
- (kk) Conducting training on Environmental Friendly Road and Bridge construction principles and methods for all members of the Program Management Team, other LGED field staff and key personnel of the selected Contractors;
- (ll) Providing on-the-job or on-site advice and training to Contractors where necessary (such as when there are changes in personnel of Contractors or when EMP is not being followed properly) to ensure proper implementation of the EMP;
- (mm) Conducting training to LGED and field officials on WB social safeguard requirements and implementation, on improving integration of social and gender mainstreaming features into future program/project design;
- (nn) Conducting training for LGED staff on road safety aspects during construction, operations and maintenance periods through demonstration of engineering mitigation measures. Road safety audits should be conducted for the program as well as for other ongoing and completed roads programs;
- (oo) Conducting training for LGED staff on road asset management. This should involve intensive consultations with LGED staff on the suitable inventory management scheme including the customization of existing road asset management system in LGED. The Consultant should work out a road asset management system (RAMS), including customization of existing RuBIMS for bridge management;
- (pp) Updating and maintenance of the Bridge Database (RuBIMS), including monitoring and checking data from annual bridge condition surveys, updating inspection procedures, bridge health inspection manual, data entry etc.;
- (qq) Operate Field Inspection and Progress Monitoring System (FIMS) to monitor and evaluate the performance of the program in relation to its goals, purposes and outputs. Baseline values should be established by the Consultant in accordance with the target indicators in the Design and Monitoring Framework of the program.

## Institutional arrangement

**12.** The civil works under the program will be executed through National Competitive Bidding. The Conditions of Contract will General Conditions of Contract follow by LGED. The "Program Manager" will be defined in the contract data which normally will be the Executive Engineer of the district under which the program will be executed. "Program Manager" will have his Authorized Representative at each Upazila level who normally will be the Upazila Engineer of the program Upazila.

**13.** The Maintenance Consultancy (MC) Service team will assist the executing agency, LGED, in the implementation of the program. The Consultant will work directly with LGED and support/assist the Program Director and his team in the PMU, Superintending Engineer at PIUs at regional level and at district level, headed by Executive Engineer and in the program areas at the Upazila level, in order to achieve the objectives of the program.



## Program Area

14. The program will be implemented in total 61 districts out of 64 districts of the country, except three hill districts (Rangamati, Khagrachari and Bandarban).

## Duration of the Assignment

15. The consultant firm is expected to conduct the services for the duration of 48 (forty eight) months. The expected commencement date of the assignment will be **July 2019**.

## Counterpart Support

- All officials under the PMU will be the key government's counterpart officials. Besides, the existing staff of LGED at HQ, Division, Region, District, and Sub-district level will also work as the counterpart staff.
- Both the counterpart government officials at PMU/PIU and regular LGED set-up will provide all kinds of assistance to the consultant team in rendering their services.
- The executing agency (LGED) will provide the consultants with suitable office space only. LGED will provide program data and reports available with it to the consultant.
- Office furniture, hardware and software, lighting, electricity, including consumption bill, air conditioning, communication and other consumables will be at the cost of the consultant.
- Any non-consumable items purchased under this consultancy package shall be handed over to LGED after completion of the contract.
- The consultant team will propose support staff (Accountant, Manager, Office boys, etc.) in its proposal for PMU and PIU level.

## Output and Reporting Requirements

16. The consultant's output will include contributions to the program's milestones, relating to the individual expertise in the team. The reporting requirement shall be as per below:

Sl. No.	Report	Frequency	Due Period	No. of Copies	No. of CDs
1.	Inception Report	One time	Within 30 days after commencement of service	5	2
2.	Monthly Report	Monthly	10 <sup>th</sup> of month following the reporting month.	5	2
3.	Quarterly Report	Every 3 months	10 <sup>th</sup> of month following the reporting quarter.	5	2
4.	Annual Report	Four Times	1 month after commencement month every year	5	2
5.	Midterm Review Report	One time	After completion of construction plus	5	2



**LOCAL GOVERNMENT ENGINEERING DEPARTMENT**

Local Government Division

Ministry of Local Government, Rural Development &amp; Cooperatives



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Sl. No.	Report	Frequency	Due Period	No. of Copies	No. of CDs
			three years of maintenance.		
6.	Construction Supervision Manual	One Time	60 days after commencement of services	5	2
7.	Road safety audit Manual	One Time	Within 12 months after commencement of service	5	2
8.	Climate adaptation design, construction and maintenance Manual	One Time	Within 12 months after commencement of service	5	2
9.	Draft Program Completion Report	One time	At the commencement of Defect Liability Period.	5	2
10.	Consultant's Work Completion Report	One Time	Within 15 days after completion of services.	5	2

**17. Inception Report:** The Consultant shall submit and present an **inception report** within one month after signing the contract. The report will include the consultant's proposals of the detailed program implementation arrangements and the planned activities for different components based on the initial assessment. The report will also include the detailed work program and approach towards the assignment. The report needs to be finalized within 15 days after receiving the comments from LGED.

**18. Monthly Report:** The consultant will submit a monthly report which must reflect all the activities undertaken during the month of the reporting period. The report must contain the targets and achievements.

**19. Quarterly Reports:** The consultant shall furnish quarterly progress reports on physical and financial progress and on implementation progress, including achievements and problems faced, if any, and the measures to overcome the constraints. The report will also focus on asset information of roads, bridge and buildings under LGED's jurisdiction. The quarterly reports shall be factual and concise with recommendations for the subsequent quarter.

**20. Annual Report:** The consultant shall furnish to LGED an annual report covering all activities in the last 12 months. In addition to summarizing key facts and issues presented in the 4 quarterly reports for the reporting period, the annual report shall include the Consultant's views on the strengths and weaknesses of the program implementation arrangements and remedial actions to be taken if any. The report shall include, among other requirements, the traffic related survey on the roads on which bridges will be implemented under the program.

**21. Midterm Review Report:** The report will summarize the progress of achieving the physical and financial targets. It will recommend actions to fill the gaps, if any. It will also review the program's compliance with environmental and social requirements.

**22. Construction Supervision Manual:** The Construction Supervision Manual is a guideline for administration, supervision and management of the program and the construction contracts to be implemented. It will serve as a guide and reference to the various staff in the management and supervision of the program in discharging their duties in a smooth and systematic manner.

**23. Road Safety Audit Manual:** The Consultant shall develop an appropriate road safety audit manual for designing roads with appropriate road safety considerations by LGED and for conducting road safety audits at each stage of road Development, i.e. design, pre-construction, construction and maintenance stages. This should be based on actual findings of the needs of LGED through the discussions and training during the assignments. The Consultant shall prepare the manual during the first 12 months of construction works to be used for follow-up trainings for LGED staff during the consulting services.

**24. Climate Change Adaptation Manual:** The Consultant shall develop an appropriate climate change adaptation manual for LGED to incorporate climate change adaptation measures into the designs of newly constructed roads, Bridges and maintenance works of the existing roads and bridges. This should be based on the existing guidelines for design of roads and bridges in Bangladesh as well as applicable international best



practices. The Consultant shall prepare the manual during the first 12 months of construction works to be used for follow-up trainings of LGED staff during the consulting services.

**25. Draft Program Completion Report:** This report is to be submitted after completion of services but within the completion period. This report will include the program performance on technical and financial components, including social and environmental issues.

**26. Program Completion Report:** The Consultant shall prepare a comprehensive final, completion report of the construction contract packages after completion of all civil work packages. The report shall incorporate summaries of the methods of construction, the construction supervision performed, reference to as-built drawings of the construction, problems encountered and solutions undertaken thereon and recommendations for future projects of similar nature to be undertaken by LGED. The report shall also summarize the details of actions taken for capacity development assignments on road safety, road asset management and climate change adaptation measures, assessment of LGED's current capacity and recommendations on future capacity development on these aspects.

## Professional Staffing Inputs

**27.** Consultant's personnel shall be fluent in (i.e. Writing, reading and speaking) the contract language, which is English. In addition, the key staff described herein, shall be computer literate regarding word processing, spreadsheets and engineering software operation.

**28.** The Consultant shall provide competent personnel for the services, who shall be managed by the Dhaka based Consultant Team and who will represent the Consultant in performing the services. The input for key Program Personnel in person-months is provided in the table below:

Sl. No.	Type of Expertise	Position/Expertise	Nos.	Person-Months	Total Person-Month
1.	Key-Expert	Pavement Maintenance Specialist	1	48	48
2.		Bridge Maintenance Specialist	2	48	96
3.		Jr. Bridge Maintenance Specialist	4	48	192
4.		Asset Management Specialist	2	48	96
5.		Road Safety Specialist	1	48	48
6.		Environmental Specialist	1	48	48
7.		Senior Material Engineer	1	36	36
8.		Equipment Specialist	1	48	48
9.		Social Specialist	1	48	48
10.		Gender Specialist	1	48	48
11.	Non Key-Expert	Jr. Quantity Surveyor	9	48	432



## Qualification and Experience Requirements of Key Experts

### 1. Pavement Maintenance Specialist

a) Qualification	Minimum: Bachelor's degree in civil engineering. Preferable: Masters degree in civil engineering or its related disciplines.
b) Total Professional Experience	20 (twenty) years of overall experiences.
c) Program-related Experience	<ul style="list-style-type: none"> <li>➤ Minimum 10years as pavement maintenance specialist/engineer in road construction and maintenance projects of similar nature. (at least 3 projects of similar nature costing over US\$ 10 million each administered).</li> <li>➤ Sound knowledge on different kind of road pavement maintenance and Asset Management.</li> <li>➤ Experiences in working for technical assistance projects of international organizations/agencies on road management and road asset management aspects.</li> <li>➤ Good knowledge and experiences in writing manuals, training modules and work skills in multi-cultural team environments.</li> </ul>
d) Overseas/Country	Preferably with substantial experience in South Asia region

### 2. Bridge Maintenance Specialist

a) Qualification	Minimum: Bachelor's degree in civil engineering. Preferable: Post graduate degree in civil engineering or its related
b) Total Professional Experience	15 (Fifteen) years of overall experiences.
c) Program-related Experience	<ul style="list-style-type: none"> <li>➤ Minimum 10years experience as a supervision Engineer in construction and maintenance supervision Engineer of at least 2 projects of similar nature costing over US\$ 5 million each administered.</li> <li>➤ Hands-on experience of bridge maintenance in international/ Bangladeshi contract</li> <li>➤ Good knowledge and experiences in writing manuals, training modules and work skills in multi-cultural team environments.</li> </ul>
d) Overseas/Country	Preferably with substantial experience in South Asia region

### 3. Jr. Bridge Maintenance Specialist

a) Qualification	Minimum: Bachelor's degree in civil engineering or its related disciplines.
b) Total Professional Experience	10 (ten) years of overall experiences.
c) Program-related Experience	<ul style="list-style-type: none"> <li>➤ Minimum 8years experience as a supervision Engineer in construction and maintenance supervision Engineer of at least 2 projects of similar nature.</li> <li>➤ Good knowledge and experience in report preparation and work skills in multi-cultural team environments.</li> </ul>

### 4. Asset Management Specialist



a) Qualification	Minimum: Bachelor's degree in civil engineering/ relevant field. Preferable: Post graduate degree in civil engineering or its related disciplines.
b) Total Professional Experience	10 (Ten) years minimum
c) Program-related Experience	<ul style="list-style-type: none"> <li>➤ Minimum 5years experience as Road Asset Management Specialist, including experience in developing road asset management systems in developing countries.</li> <li>➤ Sound knowledge on Rural Infrastructure Asset Management and related survey.</li> <li>➤ Good knowledge and experience in report preparation and work skills in multi-cultural team environments.</li> </ul>
d) Experience in working with international org./ agencies	Experiences in working for technical assistance projects of international organizations/agencies on road asset management and/road safety aspects are preferable.

## 5. Road Safety Specialist

a) Qualification	Minimum: Bachelor's degree in civil engineering. Preferable: Post graduate degree in civil engineering or its related
b) Total Professional Experience	15 (fifteen) years minimum
c) Program-related Experience	<ul style="list-style-type: none"> <li>➤ At least 8 years experience in road safety engineering, including conducting road safety audits on different types of roads, identification and treatment of black spots, development and implementation of road safety programs, road safety monitoring and evaluation.</li> <li>➤ Must have demonstrated knowledge of engineering road safety majors proven effective in Bangladesh.</li> <li>➤ Must have knowledge of proper placement and use of signs, pavement markings, roadside hardware, and human factors.</li> <li>➤ Good knowledge and experience in report preparation and work skills in multi-cultural team environments.</li> </ul>
d) Experience in working with international org./ agencies	Preferably.

## 6. Environmental Specialist

a) Qualification	Minimum: Bachelor's degree in Environmental Science/ Natural Resources Management/Engineering or its related disciplines. Preferable: Masters degree in Environmental Engineering or Environmental Science or other relevant fields.
b) Total Professional Experience	10 (ten) years of overall experiences, out of which at least 8 (eight) years extensive experience in the implementation of road/bridge projects





c) Program-related Experience	<ul style="list-style-type: none"> <li>➤ Minimum 8years experience in environmental mitigation measures for road/bridge works, environment, management and bio-engineering techniques, particularly in respect of slope stabilization and protection.</li> <li>➤ Must have full knowledge of the World Bank's guidelines, procedures and operational policies/directives. Experiences of working as an environmental expert for at least one World Bank/ ADB funded project.</li> <li>➤ Experience of preparing environmental management plans and supervising &amp; monitoring implementation of the plans.</li> <li>➤ Good knowledge and experiences in writing manuals, training modules and work skills in multi-cultural team environments.</li> </ul>
d) Experience in working with international org./ agencies	Preferably.

## 7. Senior Material Engineer

a) Qualification	Minimum: Bachelor's degree in civil engineering/ relevant field. Preferable: Post graduate degree in civil engineering or its related disciplines.
b) Total Professional Experience	15 years of relevant professional experience.
c) Program-related Experience	<ul style="list-style-type: none"> <li>➤ Minimum at least 10 years as Material Engineer/Geo-technical Engineer on Highway construction projects with various experiences in material testing (at least 2 similar highway projects costing not less than US\$ 10 Million as Material Engineer/ Geo-technical Engineer).</li> <li>➤ Should have experience of working as a material engineer on similar projects in developing countries.</li> <li>➤ Sound knowledge and must be familiar with properties of road and bridge construction materials, technical specifications and procedures of all kinds of material tests and testing equipment and should have past experience in working on reading projects running on expansive soils.</li> <li>➤ Should be familiar with establishing Quality Assurance Programs in road and bridge projects.</li> <li>➤ Good knowledge and experience in report preparation and work skills in multi-cultural team environments.</li> </ul>
d) Experience in working with international org./ agencies	Preferably.

## 8. Equipment Specialist

a) Qualification	Minimum: Bachelor's degree in mechanical/power engineering or its related disciplines.
b) Total Professional Experience	15 (fifteen) years of overall experiences,





c) Program-related Experience	<ul style="list-style-type: none"> <li>➤ Minimum 10years experience as a mechanical / equipment engineer in construction projects with various experiences in construction equipment and survey equipment maintenance &amp; management, contract administration of highway or road construction contracts, preferably having managed multiple contracts.</li> <li>➤ Should have experience of working as a material engineer on similar projects in developing countries..</li> <li>➤ Good knowledge and experience in report preparation.</li> </ul>
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## 9. Social Specialist

a) Qualification	Minimum: Master's degree in Sociology or other relevant field of Social Sciences or its related disciplines.
b) Total Professional Experience	12 years of experience of working in community development and community awareness projects in the linear highway project as Social Safeguard Specialist.
c) Program-related Experience	<ul style="list-style-type: none"> <li>➤ 8 years of experience in dealing with Safeguard related issues in a linear project as per Government of Bangladesh regulations and in accordance with the requirement of development partner; familiarity with the government system, profound communication skill with the local stakeholders.</li> <li>➤ Good knowledge and experiences in working as a social/ resettlement expert for at least one World Bank/ ADB funded project.</li> <li>➤ Good knowledge and experiences in writing manuals, training modules and work skills in multi-cultural team environments.</li> </ul>
d) Experience in working with international org./ agencies	Preferably.

## 10. Gender Specialist

a) Qualification	Minimum: Master's degree in Sociology or other relevant field of Social Sciences or its related disciplines.
b) Total Professional Experience	12 (twelve) years of overall experiences.
c) Program-related Experience	<ul style="list-style-type: none"> <li>➤ 8 years of experience in dealing with Gender related issues in a linear project as per Government of Bangladesh regulations and in accordance with the requirement of development partner; familiarity with the government system, profound communication skill with the local stakeholders..</li> <li>➤ Good knowledge and experience in report preparation and work skills in multi-cultural team environments.</li> </ul>
d) Experience in working with international org./ agencies	Preferably.

## 11. Jr. Quantity Surveyor (Non-Key Expert)

a) Qualification	Minimum: Diploma in civil Engineering. Preferable: Bachelor's degree in civil engineering or its related
b) Total Professional Experience	15 (fifteen) years of overall experiences.

**c) Program-related Experience**

- Minimum, 8 (eight) years as quantity surveyor/assistant quantity surveyor (at least 2 projects of similar nature costing over US\$ 10 million each administered).
- Familiarity with international and Bangladesh design standards.
- Hands-on experience in using various quantity-estimating software

## Position Based Tasks/Responsibility

29. The position-based tasks specified for each of the positions mentioned in the above Table are indicated in the Table below. **Consultants should note that the position-based tasks and responsibilities are only indicative and that the consultant needs to propose its own working arrangements as a team based on the overall requirements in the TORs.**

### Position-based Tasks/Responsibility (Indicative Only)

Sl. No.	Position	Tasks/Responsibilities
1.	Pavement Maintenance Specialist	<p>The Pavement Maintenance Specialist will work in close collaboration with the Superintending Engineer (Maintenance). S/he will advise the concerned official of RMRSU regarding the production of the Upazila level Maintenance Rural Road Master plans by the district offices; the respective 5 year and bi-annual works programs and oversee their implementation. The tasks of PMS typically include, but not limited to, the following:</p> <ul style="list-style-type: none"><li>• Review the preliminary designs of the periodic maintenance, overlay, rehabilitation, reconstruction and pavement widening projects;</li><li>• Review the standard designs of LGED and suggest any modifications if required;</li><li>• Assist with the development of DPPs, ensuring the inclusion of the periodic maintenance, rehabilitation, reconstruction and pavement widening works in the DPP schedule;</li><li>• Develop an M&amp;E system for tracking the performance of the Development Projects and District Engineering Offices regarding the implementation of the agreed Work Programs;</li><li>• Develop an M&amp;E system for tracking the performance of the LCS and MMTs under the District /Upazila engineering offices. If the performance is unsatisfactory, S/he shall identify the causes of underperformance and advise official of RMRSU about rectifying measures;</li><li>• Run the M&amp;E systems on a quarterly basis and report any deficiencies to the concerned official of RMRSU;</li><li>• Provide quality assurance services regarding pavement, asset condition surveys, traffic count and axle load surveys. When needed the PMS will prepare tender documentation for further pavement analysis and engineering assignments, review EOIs;</li><li>• Develop design specifications for XENs and PDs for periodic maintenance, rehabilitation, reconstruction and pavement</li></ul>



Sl. No.	Position	Tasks/Responsibilities
		<p>widening projects;</p> <ul style="list-style-type: none"><li>• Prepare training documents for LGED officials, national consultants and contractors that may in the future work on pavement maintenance. These trainings may include activities, but are not limited to condition monitoring, (non-) destructive testing, PMS application, designing repair, rehabilitation and reconstruction options and manage their implementation;</li><li>• Act as resource person/ facilitator in different training course organized by LGED. Also act a Master to LGED appointed apprentices. These apprentices shall work under the direct management of the Team Leader of the Program;</li><li>• Coordinate and consult with LGED and concerned stakeholders regularly; monitor the progress and outcomes of the project;</li><li>• Assess the existing procurement method and strategy and suggest if any modifications required;</li><li>• Prepare procedures for the conduct of regular road surveys and traffic count surveys on bitumen-surfaced Upazila roads (UZR) and prepare a procedure for planning the annual program of UZR and UNR (Union Roads) for improvement and upgrading works under the project/program;</li><li>• Cooperate closely with the project director in planning, coordinating and monitoring project implementation;</li><li>• Advise in the preparation of specifications in consultation with the project director, in accordance with Government requirements; Donor's Guidelines;</li><li>• Advise on any modifications or additions required to standard designs and technical specifications used by LGED in order to meet project requirements, and prepare design standards for innovative activities;</li><li>• Prepare and operate monitoring plan and reporting system on the performance of planned improvement and upgrading of roads in the project area;</li><li>• Assist the project director in establishing effective road improvement and upgrading planning and implementation procedures in the project districts and assist the PMU staff to monitor the procedure for selection of structure on rural road under the program;</li><li>• Advise relevant specialist in the design and conduct of training programs and orientation curriculum employing participatory approaches and manuals for various courses and workshops in line with the project objectives, including gender &amp; social analysis, resettlement planning, environmental assessments, Environmental management and climate change adaptation, road safety, and construction procedures and other social development</li></ul>



Sl. No.	Position	Tasks/Responsibilities
		<p>related areas in consultation with the management and other team members;</p> <ul style="list-style-type: none"><li>• Ensure the poverty, social development and gender as well as environmental and climate change issues are integrated in all training/ orientation program and course where relevant;</li><li>• Advise on the coordination of project activities with relevant units and cells in LGED, and liaise with other development partners', in order to ensure that the project contributes to strengthening institutional capabilities in LGED;</li><li>• Prepare Inception report and other periodic consolidated Monthly, Quarterly and Annual reports. At the end of the assignment, prepare a consolidated final report.</li><li>• Assist with any other program relevant duties as may be reasonably assigned by the project director.</li><li>• Ensure contractor effects and implements Quality Control System.</li><li>• Direct and/or advise contractors to avoid and/or reduce the risk in case of any emergency.</li><li>• Advise contractor in all matters covering safety and care of work, environmental aspects and labour welfare during field visits.</li><li>• Ensure that contractors implement and maintain the environmental monitoring in compliance with the environmental management plans (EMPs) as a part of the civil work contracts.</li></ul>
2.	Bridge Maintenance Specialist	<p>The Bridge Maintenance Specialist shall work under the supervision of the International Senior Bridge Maintenance Specialist and Program Team Leader. The tasks of Bridge Maintenance Specialist typically include, but not limited to the following:</p> <ul style="list-style-type: none"><li>• Review bridge inventory and condition data presently being collected by the Service Provider and if necessary make specific recommendation for future updates and additional data required to develop annual bridge maintenance plans;</li><li>• Review the proposed BMS and make recommendations regarding its improvement;</li><li>• Based on available bridge data, identify the primary maintenance needs of the current bridge stock and in consultation with LGED, develop a draft strategy to deal with the backlog and periodic maintenance needs on the national bridge network;</li><li>• Develop procedures for preparing short, medium and long term investment plans;</li><li>• Preparation of the designs and works specifications for non-routine maintenance works, including rehabilitation works, reconstruction works and widening works;</li><li>• Prepare 5 year rolling works programs (constrained and unconstrained budget analysis) for maintenance, rehabilitation and</li></ul>





Sl. No.	Position	Tasks/Responsibilities
		<p>reconstruction works;</p> <ul style="list-style-type: none"><li>• Carry out quality control functions regarding the work done by the junior bridge maintenance specialist and the regional bridge maintenance engineers;</li><li>• Carry out the specific visual detailed inspections, manage non-destructive testing carry out structural reviews, carry out load tests, prepare major maintenance, rehabilitation, reconstruction schemes;</li><li>• Prepare Quality Control and Quality Assurance plan for schemes, implemented for bridge design, maintenance and construction;</li><li>• Travel to collect field data, conduct reviews, monitor construction progress, conduct design meetings, and participate in public hearings;</li><li>• Prepare the bridge maintenance plans and work programs and integrating all maintenance plans, works programs etc.;</li><li>• Assist LGED regarding improvements to the BMS especially regarding prioritizing maintenance needs due to budget constraint;</li><li>• Carry out principle inspections on bridges construction and maintenance activity by others (including special projects) and reporting on their acceptability for inclusion in the LGED bridge stock;</li><li>• Assist in updating and maintenance of the Bridge Database (RuBIMS), including monitoring and checking data from annual bridge condition surveys, updating inspection procedures, data entry etc.;</li><li>• Assist in carrying out bridge condition survey, bridge health monitoring, updating bridge database;</li><li>• Check the work of Consultants engaged in the design of maintenance intervention on bridges and make recommendations for LGED's consideration. If required, provide specific advice on the current bridge upgrading and maintenance projects;</li><li>• Undertake regular field visits to the project districts to review implementation and supervision of project civil work and contribute to resolving any issues arising;</li><li>• Contribute to the training of PMU and LGED district and Upazila staff on project implementation procedures and technical matters;</li><li>• Carry out regular inspection of Contractor's equipment, plant, machinery, installations, housing and medical facilities;</li><li>• Supervise the contractor in all matters concerning the safety of works, labour, workmen and environmental aspects and labour welfare;</li><li>• Assist employers in arranging all correspondence, meetings and preparation of details related to the assigned project road package</li></ul>





Sl. No.	Position	Tasks/Responsibilities
		<p>implementation;</p> <ul style="list-style-type: none"><li>• Review “as-built” drawings prepared by the Contractor and maintain records of tests of all data and records;</li><li>• Assist the PMU/TL and the project director in planning, coordinating and monitoring of project implementation, including preparation of the annual plans of Operations and in the preparation of detailed budgets for all program activities;</li><li>• Advise on the establishment of sample on-site checks of the execution of civil works, and of quality and quantity control, and provide advice on remedial actions as required;</li><li>• Assist with the certification of the due quantity and quality of all works, based on cross-checking of on-site approvals by the Field Supervision Engineers;</li><li>• Prepare training documents for LGED officials, national consultants and contractors that may in the future work on structure maintenance. These trainings may include activities, but are not limited to condition monitoring, non-destructive tests, reversed structural engineering, BMS application, designing repair, rehabilitation and reconstruction options and their implementation;</li><li>• Advise on the content and organization of training courses where necessary, and the conduct of training for LGED district and Upazila staff and for local contractors, in construction methods, on-site supervision and quality control, laboratory testing procedures, and contract management;</li><li>• Act as resource person/ facilitator in different training course organized by LGED. Also act a Master to LGED appointed apprentices. These apprentices shall work under the direct management of the Team Leader of the Program;</li><li>• Contribute to the preparation of quarterly, annual and midterm reports, and participate in regular co-ordination meetings with project implementation staff.</li></ul>
3.	Jr. Bridge Maintenance Specialist	<p>The Jr. Bridge Maintenance Specialist shall work under the supervision of the Bridge Maintenance Specialist and Program Team Leader. The tasks of Jr. Bridge Maintenance Specialist typically include, but not limited to the following:</p> <ul style="list-style-type: none"><li>• Review existing practice/scheme of maintenance (routine and maintenance) for bridges, including the planning approach (prioritization, budget proposal, budget and resource allocation, resource utilization); and execution aspects (technologies/methods; contractual arrangements; works supervision institution at district and HQ level, and so on);</li><li>• Review Maintenance and Operation Manuals and provide recommendations for their improvement;</li><li>• Identify the need of resources and training and prepare training materials;</li></ul>



# LOCAL GOVERNMENT ENGINEERING DEPARTMENT

Local Government Division

Ministry of Local Government, Rural Development & Cooperatives



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Sl. No.	Position	Tasks/Responsibilities
		<ul style="list-style-type: none"><li>• Prepare 5 year rolling works programs (constrained and unconstrained budget analysis) for maintenance, rehabilitation and reconstruction works;</li><li>• Carry out the specific visual detailed inspections, manage non-destructive testing carry out structural reviews, carry out load tests, prepare major maintenance, rehabilitation, reconstruction schemes;</li><li>• Physical and financial tracking of the routine bridge maintenance activities as per their annual routine maintenance plans and prepare progress reports;</li><li>• Carry out principle inspections on bridges construction and maintenance activity by others (including special projects) and reporting on their acceptability for inclusion in the LGED bridge stock;</li><li>• Update and maintenance of the Bridge Database (RuBIMS), including monitoring and checking data from annual bridge condition surveys, updating inspection procedures, data entry etc.;</li><li>• Carry out bridge condition survey, bridge health monitoring, updating bridge database;</li><li>• Check the work of Consultants engaged in the design of maintenance intervention on bridges and make recommendations for LGED's consideration. If required, provide specific advice on the current bridge upgrading and maintenance projects;</li><li>• Undertake regular field visits to the project districts to review implementation and supervision of project civil work and contribute to resolving any issues arising;</li><li>• Ensure the implementation of the EMP;</li><li>• Contribute to the training of PMU and LGED district and Upazila staff on project implementation procedures and technical matters;</li><li>• Carry out regular inspection of Contractor's equipment, plant, machinery, installations, housing and medical facilities;</li><li>• Supervise the contractor in all matters concerning the safety of works, labour, workmen and environmental aspects and labour welfare;</li><li>• Assist employers in arranging all correspondence, meetings and preparation of details related to the assigned project road package implementation;</li><li>• Assist in undertaking, guiding, checking and supervising detail engineering (topographical, detail bridge condition survey), social, environmental and economic survey;</li><li>• Monitor on-site material and equipment storage and storage and handling procedures, and environmental practices, and advise on remedial measures if necessary;</li><li>• Review "as-built" drawings prepared by the Contractor and maintain records of tests of all data and records;</li><li>• Assist the PMU/TL and the project director in planning, coordinating and monitoring of project implementation, including preparation of the annual plans of Operations and in the preparation of detailed budgets for all program activities;</li></ul>



Sl. No.	Position	Tasks/Responsibilities
		<ul style="list-style-type: none"><li>Assist in the establishment of sample on-site checks of the execution of civil works, and of quality and quantity control, and provide advice on remedial actions as required;</li><li>Periodically inspect quality control tests of materials and works, Assist with the certification of the due quantity and quality of works;</li><li>Assist in preparation of training documents for LGED officials, national consultants and contractors that may in the future work on structure maintenance. These trainings may include activities, but are not limited to, condition monitoring, non-destructive tests, reversed structural engineering, BMS application, designing repair, rehabilitation and reconstruction options and their implementation;</li><li>Assist in organizing of training courses where necessary, and the conduct of training for LGED district and Upazila staff and for local contractors, in construction methods, on-site supervision and quality control, laboratory testing procedures, and contract management;</li><li>Monitor if any grievances have been registered by the beneficiaries;</li><li>Inform and suggest promptly any relevant information from the field which will improve the implementation of the program;</li><li>Report regularly to the PMU and TL/PD and Resident cum Quality Control Engineer on the progress and performance of civil works, and identify any critical issues which require attention;</li><li>Any other relevant assignments given by the Project Director and TL.;</li><li>Contribute to the preparation of quarterly, annual and midterm reports, and participate in regular co-ordination meetings with project implementation staff.</li></ul>
4.	Asset Management Specialist	<p>The Asset Management Specialist shall work under the supervision of the Senior Asset Management Specialist (International) and Program Team Leader. The tasks of Asset Management Specialist typically include, but not limited to the following:</p> <ul style="list-style-type: none"><li>Review the quality of the maintenance works designs: The preparation of the works include developing strip maps, conducting tests and collect additional data, conduct engineering analysis, determine the most appropriate repair options, design pavement structures, like overlays and translate these in works bid documents and Engineers' cost estimates;</li><li>Review the Road Asset Management System of the District Engineering Offices and identify weaknesses and strengths;</li><li>Review the usefulness, appropriateness of LGED RAMS, set standards for implementation of a modern Road Infrastructure Asset Management System (IT and modern Software base);</li><li>Identify various issues in implementation of RAMS and possible solutions to those issues;</li><li>Identify and set standards for different category of the Roads and determine the Level of Services which will be affordable for LGED and its subsidiary offices to make it sustainable;</li><li>Set standards for measuring the performance of RAMS and develop a performance mechanism, including four types measures Input, Output,</li></ul>



Sl. No.	Position	Tasks/Responsibilities
		<p>Outcome and Efficiency both qualitatively and quantitatively (Data Collection, Data storage, Data Management, Analyses and Reporting);</p> <ul style="list-style-type: none"><li>• Provide a technical and economic basis for RAMS allocations, and help LGED with defending its road maintenance budget requests;</li><li>• Find-out a possible ways to finance the works, mobilize funding and identify possible resources available;</li><li>• Prepare the maintenance plans and works programs for road, bridge and building assets maintained by the district offices and integrating all maintenance plans, works programs etc.;</li><li>• Comprise and update a disaster mitigation strategy (essentially flooding) component into the LGED's capability by close coordination with the Climate Change Adaptation consultants;</li><li>• Assist the SAMS in preparation and pilot-test the asset management manual, training modules and tools for asset management for LGED;</li><li>• Organize and conduct trainings and related activities to build capacities for asset management to be participated by LGED's central level engineers and other identified participants;</li><li>• Organize and conduct workshops and related activities to consolidate learning, suggestions and proposed enhancements on the manual, modules and tools on asset management;</li><li>• Coordinate all aspects of the program with project stakeholders to inform and ensure that the program is complementary in nature to the country-wide effort to achieve durable road infrastructure;</li><li>• Assist in procurement of asset management related equipment and software;</li><li>• Support concerned officer of LGED by improving efficiency of sector management, including institutionalizing clear job description/ responsibilities of LGED central and regional levels;</li><li>• Support concerned officer of LGED by strengthening maintenance management systems to improve reliable road connectivity in the Upazilas;</li><li>• Support concerned officer of LGED by taking steps in case of large emergencies and natural calamities;</li><li>• Develop a code of practice for road maintenance management by district/Upazila Engineering Offices that will result in sustained rural road networks; define the powers and obligations between the various echelons of LGED, MOF, NPC, MOLG&amp;C for managing the road assets;</li><li>• Carry out a series of consultations and discussions with LGED engineers both at HQ and field level, including field visits to existing roads before developing road asset management system;</li><li>• Report to Team Leader and work in close coordination with Project Management Team;</li><li>• Coordinate with donors (organize donor coordination meetings, prepare project proposals and so on).</li></ul>
5.	Road Safety Specialist	The Road Safety Specialist shall work under the supervision of the Pavement Maintenance Specialist and Program Team Leader. The





Sl. No.	Position	Tasks/Responsibilities
		<p>tasks of Road Safety Specialist typically include, but not limited to the following:</p> <ul style="list-style-type: none"><li>• Review current measures being adopted by LGED and recommend improvements to work zone safety management by addressing technical, contractual and institutional dimensions related to safety during road construction, including the implementation and enforcement mechanism for safety management during the construction stage;</li><li>• Review and update the existing design specifications for specific road safety works and review geometric designs from a road safety perspective;</li><li>• Identification of procedures for black spot identification. The focus of this aspect should be to evolve a system to identify accident-prone spots or sections and suggest remedial measures;</li><li>• Set up temporary solutions and evaluate their performance as part of creating appropriate road safety solutions for complicated local problems;</li><li>• Conduct an International Road Assessment Program (iRAP) assessment on the Upazila Road Networks; identify and prepare a list of high risk locations and recommend countermeasures for improvement;</li><li>• Prepare and economic ex-ante and post evaluation model for appraising road safety mitigation investments;</li><li>• Establish sustainable Monitoring and Evaluation System for systematic measurement of road safety outputs and outcomes and evaluation of interventions;</li><li>• Examine and recommend measures for Black spot rectification and prepare estimates;</li><li>• Prepare a system for Road Accident Recording and Analyzing to enable LGED to carry out black spot analysis in the future. This includes setting up a data collection system. Determine required budget for setting up and running the system;</li><li>• Coordinate with the Police Department in their effort to establish road accident database management system. To reconcile historical road accident data and do crash analyses and Black Spot identification;</li><li>• Provide support to LGED in the development of an appropriate interface to the accident data collection system being developed/used by Traffic Police for capturing accident data;</li><li>• Assist to establish a sustainable institutional framework for efforts to improve road safety. This includes legal, financial and organizational aspects as well as co-operation between different authorities;</li><li>• Develop and manage the implementation of target driven road safety awareness campaigns to address the specific road user behavior;</li><li>• Update Manual on existing Road Safety Audit; Prepare pre-feasibility studies for road safety subprojects;</li><li>• Conduct road safety audits and road safety inspections and deliver reports;</li><li>• The audit will, inter-alia, examine and determine accident statistics (fatal,</li></ul>





Sl. No.	Position	Tasks/Responsibilities
		<p>grievous, others), map them by approximate location, identify causative factors, and prioritize spots for corrective measures;</p> <ul style="list-style-type: none"><li>• Prepare preliminary designs for road safety interventions; Typical measures will include signage, dividers, junction traffic management installations (passive and active), S-curve improvements, and so on. All improvements will be done within the existing available land, and no acquisition is envisaged;</li><li>• Develop a Road Traffic and work zone safety manual of road infrastructure safety principles and good practice incorporating safe system principles. For Work Zone Safety, develop an application to help implement, manage, monitor and evaluate Safety measures;</li><li>• Appraise traffic management arrangements for road works and new road alignments and intersection designs. These reviews will include both Traffic Safety for all users and protection of construction and maintenance workers on site;</li><li>• Conduct post-sub project monitoring missions and prepare post-subproject reports;</li><li>• Make recommendations and arrange for training needs to LGED staff, Contractors &amp; concessionaires, and support Road Maintenance and Road Safety Unit in organizing the training curriculum. Identify suitable training opportunities for staff training and capacity building of LGED, including national and International courses and prepare a training curriculum for LGED and assist in organizing workshops/seminars/ Lectures as required;</li><li>• Contribute content on road safety activities, status and issues to prepare monthly report, quarterly report, annual report, midterm and project completion reports;</li><li>• Provide training and workshops for LGED staff, stakeholder, beneficiaries, community people, LGIs representatives, vehicle operators and vehicle owner on road safety issues;</li><li>• Provide/assist the hiring of a Road Safety Auditors and overseeing his / her work. He/she will prepare TOR and RFP in line with the best practices for procurement of a Road Safety Consulting firm;</li><li>• Provide support to Road Maintenance and Road Safety Unit for undertaking a comprehensive review of documents to improve the contractual framework for safety management, including contract bid documents, RFPs and TOR for construction supervision/independent/ specialized road safety consultancies;</li><li>• Developing a web based Road Safety GIS enabled application for implementing, managing, monitoring and evaluating Road Safety measures and Decision Support System for managing Black spots, Road Safety Audit and other issues of interfacing with other Stakeholders;</li><li>• Make a recommendation for and assists in developing for organizational capacity of LGED for safety management through all phases of rural road development and maintenance;</li><li>• Develop and oversee a road accident data management system for the</li></ul>



Sl. No.	Position	Tasks/Responsibilities
		RMRSU, including defining the data requirements and collection procedures, and conducting the initial data analysis.
6.	Environmental Specialist	<p>The Environmental Specialist shall work under the supervision of the Program Team Leader. The tasks of Environmental Specialist typically include, but not limited to the following:</p> <ul style="list-style-type: none"><li>• Assess the country's implementation practice, capacity, and commitment to plan, implement, monitor, and report on the safeguard measures;</li><li>• Assess gap and prepare safeguard related action program to address the identified weaknesses, including consideration on the need for capacity strengthening measures;</li><li>• Identify measures for monitoring environmental safeguard system performance;</li><li>• Assist PD for planning and implementation of environmental safeguard activities in close coordination with social safeguard consultant;</li><li>• Participate in the development, and facilitate the effective compliance of Environmental and Social Management Framework (ESMF) of the project during planning, implementation and monitoring and supervision of the safeguard works of the road or bridge sub project;</li><li>• Facilitate and provide simple guidance to ensure the staff of the Program and LGED to understand their responsibilities for environment friendly implementation of sub-projects in accordance with the project's plan and design, budget, specifications, estimated cost, bid documents and contract agreement clauses;</li><li>• Support to conduct Environmental screening and prepare an Environmental Management Plan (EMP) along with social safeguard consultant and Project support Engineers in the prescribed format and submit to PD;</li><li>• Assist and facilitate to Project for conducting Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) of the proposed road and/or bridge sub project as per the EPA/EPR;</li><li>• Provide guidance and supervise the day to day work of social mobilize in environmental safeguard activities;</li><li>• Support to collect of baseline information on physical, biological and socio-cultural environment of the proposed road sub project and include in EMP;</li><li>• Support to identify potential adverse environmental impacts and propose appropriate mitigation and enhancement measures and include in EMP;</li><li>• Conduct different community level meetings for collecting baseline identifying adverse impact and proposing mitigating measures;</li><li>• Prepare spoils disposal plan, borrow pit plan, Quarry site plan and Bioengineering plan and facilitate to implement the plans in close coordination with user committees;</li><li>• Support to prepare a compensatory plantation plan and facilitate to implement the plan as per the provision of the ESMF;</li><li>• Provide orientation to local level stakeholders along with contractors for the provision of ESMF and specific EMP activities to be complied by</li></ul>



# LOCAL GOVERNMENT ENGINEERING DEPARTMENT

Local Government Division

Ministry of Local Government, Rural Development & Cooperatives



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Sl. No.	Position	Tasks/Responsibilities
		<p>contractors and users;</p> <ul style="list-style-type: none"><li>• Prepare a plan of programs for environmental safeguard (environmental awareness, orientation and training) for particularly for Project staff, LGED, local contractors and other target stakeholders and implement after approval of PD;</li><li>• Assist and facilitate to record and resolve the grievances regarding environmental safeguards in the districts;</li><li>• Support to identify any outstanding issues appeared during the improvement or construction work and prepare a plan of mitigation measures and facilitate to submit to PD for the approval;</li><li>• Support Project in undertaking Supervision of each road/bridge subproject as per the procedures described in ESMF;</li><li>• Prepare and timely submitting of environmental monitoring and supervision reports to PD;</li><li>• Assist LGED to implement the measures identified in the EMP to include liaisons with concerned agencies to secure the necessary clearances and permits (e.g. tree cutting, utility shifting, working near irrigation canals)</li><li>• Monitor the effectiveness of EMP and negative impacts on the environment caused by the construction works and provide technical advice, including a feasible solution, so the LGED can improve the situation when necessary;</li><li>• Assist PMU and TL for accumulating climate vulnerability data and information from various national and if possible from international sources;</li><li>• Investigate the current status of the climate change, vulnerability and impacts over the study area and analyze in detail the future climate change projection and scenario;</li><li>• Review periodically and report on the impact of Project actions on the environment and determine the nature and extent of environmental impact, if and, caused by the Program;</li><li>• Identify budget needs to strengthen LGED capacity improvement project for adequate environmental monitoring and management of the project;</li><li>• Advise and support LGED in building in-house capacity for the training of LGED staff to carry out an initial environmental examination for its projects, awareness-building of and motivating stakeholders/beneficiaries on environmental issues;</li><li>• Conduct compliance inspections to monitor EMP and prepare compliance progress toward the expected outcomes, verify monitoring information to identify adverse environmental impacts, document results, identify the necessary corrective actions, and reflect them in a corrective action plan;</li><li>• Keep the liaison with institutions responsible for climate change issues in Bangladesh to keep abreast all information necessary for to assist team leader in planning and designing climate resilient infrastructure for the project;</li><li>• Prepare training materials and provide training to the LGED engineers</li></ul>



Sl. No.	Position	Tasks/Responsibilities
		<p>and stakeholders on environment and climate change, impacts and adaptation especially for climate resilient road maintenance;</p> <ul style="list-style-type: none"><li>• Provide inputs into a training course for the project as required;</li><li>• Prepare environmental field monitoring report, quarterly report, annual report, midterm report and project completion reports;</li><li>• Support the TL in preparing the monthly, quarterly, annual, midterm and project completion reports;</li><li>• Other duties as may be identified by the Project Director and TL.</li></ul>
7.	Senior Material Engineer	<p>The Senior Material Engineer shall work under the supervision of the Pavement Maintenance Specialist and Program Team Leader. The tasks of Senior Material Engineer typically include, but not limited to the following:</p> <ul style="list-style-type: none"><li>• Inspect the performance of works in compliance with specifications, order, supervise, or perform tests on materials and approve or disapprove the Contractor's plant and equipment; order the removal of improper or substandard works and expose work which has been covered without permission;</li><li>• Check the progress of the work, examine and attend the measurement of any work that is about to be covered, and order, if required, uncovering of unsatisfactory works and its satisfactory reconstruction;</li><li>• Providing technical advice about the suitability of materials, Develop, modifying, testing and evaluating materials;</li><li>• Continuously monitor the materials used in the works in order to ensure that quality is maintained. To aid in this, the Consultant shall pay periodic visits to sources of natural materials and production and manufacturing plans;</li><li>• Inspect all test records and results supplied by the Contractor and will also carry out additional independent testing in order to verify the quality of materials or the compliance with performance specifications;</li><li>• Diagnosing faults and recommend mitigation action;</li><li>• Advising on, planning and organizing inspections, maintenance and repairs;</li><li>• Overseeing operational quality control processes, evaluate technical specifications;</li><li>• Liaising with suppliers, customers and construction/manufacturing/development staff, supervising engineer and technical staff;</li><li>• Independent audit checks, through visual inspections and material testing, will also be undertaken by the Consultants to verify that the Quality Assurance (QA) records provided by the Contractor are in accordance with the statements being made by him;</li><li>• Participate, evaluate Technical Audits of ongoing and completed schemes;</li><li>• Provide protocols for material testing; assist with test formats, procedures of quality control tests required by the project;</li><li>• Overall quality control and quality administration/assurance;</li></ul>





Sl. No.	Position	Tasks/Responsibilities
		<ul style="list-style-type: none"><li>• Verify and approve the quality control test reports, material test certificates;</li><li>• Review, reject, comment or approve the Contractors' sources of materials;</li><li>• Provide technical backstopping on designs, technical standards and specifications;</li><li>• Undertake test check of construction material samples;</li><li>• Specify and monitor quality assurance plans and quality control tests being conducted in all packages;</li><li>• Work in close coordination with Project Engineers;</li><li>• Determine if the works are ready to be taken over. The effective date of any Taking-Over Certificate will mark the commencement of the 12-month Defects Notification Period for the part of the work to which the Taking-Over Certificate relates;</li><li>• Prepare training materials and provide training to the LGED engineers and stakeholders on construction material and its tests;</li><li>• Act as resource person/ facilitator in different training course organized by LGED. Also act a Master to LGED appointed apprentices. These apprentices shall work under the direct management of the Team Leader of the Program;</li><li>• Provide inputs into a training course for the project as required;</li><li>• Prepare a quality control field monitoring report, quarterly report, annual report, midterm report and project completion reports;</li><li>• Support the TL in preparing the monthly, quarterly, annual, midterm and project completion reports;</li><li>• Other duties as may be identified by the Project Director and TL.</li></ul>
8.	Equipment Specialist	<p>The Equipment Specialist shall work under the supervision of the Program Team Leader. The tasks of Equipment Specialist typically include, but not limited to the following:</p> <ul style="list-style-type: none"><li>• Receiving, issuing, handling and accounting for inventory of the equipment stock;</li><li>• Develop and implement a formal construction equipment operation/ safety training program;</li><li>• Develop and implement standardized construction equipment, pre-operational inspection procedures, log book formats, and routine reporting requirements;</li><li>• Ensure that adequate and current safety standards are reflected and maintained in all construction and survey equipment and ensure that relevant document to that effect are generated and stored;</li><li>• Develop, implement, and manage fleet maintenance plans designed to ensure fulfillment of program goals and obligations to include, but not limited to, safety, cost, quality, and compliance;</li></ul>





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Sl. No.	Position	Tasks/Responsibilities
		<ul style="list-style-type: none"><li>• Maintain an inventory of all equipment upon initial receipt and/or final turn-in inspections;</li><li>• Develop and implement standardized equipment and spare part sharing program</li><li>• Identify and procure replacement parts and materials required for repair of assets;</li><li>• Reduce construction equipment costs across the fleet through the development and implementation of best practices;</li><li>• Improve construction equipment preservation efforts leading to increased service life;</li><li>• Develop and implement mobile equipment tire management program;</li><li>• Develops a vendor review process to monitor and evaluate 3rd party performance vs. cost;</li><li>• Ensure proper maintenance and servicing is delivered and equipment is properly maintained;</li><li>• Evaluate all requests for construction and survey equipment procurement and provide guidance to best option – purchase new, purchase used, rebuild, lease, etc.</li><li>• Advise LGED with determining the right fleet size to improve utilization and availability of equipment;</li><li>• Participates in capital budget planning for construction equipment replacements and additions;</li><li>• Work with the LGED regarding procurement and purchases of new equipment. This includes vendor selection and negotiation of purchase or lease. Prepared equipment specification and works with vendors to establish equipment specifications;</li><li>• Act as resource person in a different training course organized by LGED. Also act a Master to LGED appointed apprentices. These apprentices shall work under the direct management of the TL of the Program;</li><li>• Provide inputs into a training course for the project as required;</li><li>• Prepare equipment monitoring report, quarterly report, annual report, midterm report and project completion reports;</li><li>• Submit monthly report with updates on activities and mobile equipment program status;</li><li>• Support the TL in preparing the monthly, quarterly, annual, midterm and project completion reports;</li><li>• Other duties as may be identified by the Project Director and TL.</li></ul>
9.	Social Specialist	<p>The Social Specialist shall work under the supervision of the Program Team Leader. The tasks of Social Specialist typically include, but not limited to the following:</p> <ul style="list-style-type: none"><li>• Identify the project related interests of key stakeholders (poor and discriminated groups in particular) and barriers that are likely to prevent</li></ul>



Sl. No.	Position	Tasks/Responsibilities
		<p>them from participating in and benefiting from the project resources. Suggest possible strategies for addressing their concerns;</p> <ul style="list-style-type: none"><li>• Set out the principles, guidelines, and procedures to assess environmental and social risks, and proposes measures to reduce, mitigate, and/or offset potential adverse environmental and social impacts and enhance positive impacts and opportunities of said project(s), activity(-ies), or policy(-ies)/regulation(s);</li><li>• Ensure that project implementation is in compliance with the World Bank's social safeguard principles and that the project activities are not in violation of the social safeguards regulations (IFC Standards) and TDP prepared for the project;</li><li>• Prepare the social part of the Environmental and Social Management Framework (ESMF) that is compliant with the applicable World Bank safeguard policies;</li><li>• Conduct an examination of the risks and potential impacts associated with one or more project(s), activity(-ies), or policy(-ies)/regulation(s) that may occur in the future as part of the implementation of the Program;</li><li>• Regarding triggered safeguard policies, develop mitigation actions and ensure their incorporation in project activities;</li><li>• Provide procedures for: (i) consultations with concerned stakeholder groups; (ii) capacity building measures; and (iii) environmental and social impact screening, assessment, and monitoring;</li><li>• Specify the inter-institutional arrangements for the preparation of time-bound action plans for managing and mitigating adverse impacts related to the future subproject(s), activity(-ies), or policy(-ies)/regulation(s);</li><li>• Provide conceptual and operational leadership on the core social development themes pursued in the program;</li><li>• Ensure that social issues have been adequately addressed pursuant to the Social Safeguard Policies;</li><li>• Advise the Project Director on issues relating to social development and contribute to discussions on social analysis;</li><li>• Prepare reports on social safeguards aspects of the project taking into account inter, alia social outreach, impacts, constraints and risk;</li><li>• Lead communication with government and other partners in sharing project progress, and seeking feedback to improve social development related issues;</li><li>• Conduct baseline and other surveys as required for collecting and analyzing data required for the evaluation of the bridge building;</li><li>• Maintain the records of affected families, vulnerable people and other socioeconomic baseline data of the selected sub-projects;</li><li>• Support the Project for planning and implementation of social safeguards as per Environmental and Social Management Framework (ESMF);</li><li>• Facilitate in the process employing at least 20% women in the work force in the program;</li><li>• Prepare Social Screening and identify adverse social impact due to rural road/bridge improvement/maintenance;</li></ul>



Sl. No.	Position	Tasks/Responsibilities
		<ul style="list-style-type: none"><li>• Conduct monitoring activities in certain interval as provisioned in ESMF and prepare monitoring reports;</li><li>• Facilitate to register and resolve sub-project related grievances and social issues;</li><li>• Support to organize workshop/training/meeting on social/environmental safeguards and as provisioned in ESMF;</li><li>• Assist PD in implementation of social safeguard principles and policies paying with especial attention of vulnerable groups, women headed households, children, poor, indigenous and tribal groups, landless and squatting population;</li><li>• Report to PD regarding the progress of activities related to social safeguards, traffic volume, baseline information, community audit and other social activities exercised in each sub project of the working districts;</li><li>• Any other task as may be assigned by the Project Director.</li></ul>
10.	Gender Specialist	<p>The Gender Specialist shall work under the supervision of the Program Team Leader. The tasks of Gender Specialist typically include, but not limited to the following:</p> <ul style="list-style-type: none"><li>• Identify women for appropriate skill development activities to improve the livelihoods. Conduct needs assessment of the women for skills development;</li><li>• Identify barriers that are likely to prevent women from participating in and benefiting from the project employment opportunities. Suggest possible strategies for addressing these concerns;</li><li>• Review and if necessary revise the Gender Action Plan;</li><li>• Ensure implementation and monitoring of Gender Action Plan;</li><li>• Orient contractors and labors on principle and requirement to employ at least 20% of women in the work force;</li><li>• Conduct baseline and other surveys as required for collecting and analyzing data required for the evaluation of the bridge building;</li><li>• Organize and provide skill development training for potential female work force;</li><li>• Ensure fair working condition to the labourers, conduct awareness raising programs for labourers, at construction sites informing them about their opportunities right, duties, hygiene, safety etc.;</li><li>• Ensure representative participation of women in different employment categories;</li><li>• Ensure the protection of the work force at risk and especially women during project implementation;</li><li>• Work closely with the bridge engineers and assistant engineers in order to avoid and minimize adverse impact of the bridge construction to the extent possible and document all the information;</li><li>• Collect Success/Failures Stories, Prepare Case studies human interest stories and assist PD for wider circulation, sharing;</li><li>• Work to increase the visibility of the female participation on construction sites, prepare ToR for NGO engagement;</li></ul>



Sl. No.	Position	Tasks/Responsibilities
		<ul style="list-style-type: none"><li>• Monitor the inclusive participation of women and GADs in the program and prepare quarterly progress reports, reporting their working days, salary payments and so on;</li><li>• Monitor of workers' welfare, including those in contractor's packages;</li><li>• Organize and conduct orientation and awareness trainings/events about the female workforce participation in the project as required;</li><li>• Compile data related to program output and outcome indicators and collect and compile required data;</li><li>• Compile relevant sections of monthly, quarterly and annual progress data, and prepare reports.</li><li>• Assist PD about the availability of local labor/women's labor and assess the status of contractor-employed labor, mode of payment and fair working condition as provisioned in PAD and DPP.</li><li>• Prepare Labor Camp Management Guideline &amp; verifies compliance thereof;</li><li>• Assist in installing a gender-based monitoring system at all levels, in collaboration with the PMU and, TL and Resident-cum-Quality Control Engineer and prepare ToR for NGO engagement;</li><li>• Prepare a component-wise annual plan and budget for gender and development activities, and integrate in the overall annual plan of the program;</li><li>• Liaise closely with the Social safeguard specialist;</li><li>• Undertake and initiate research and analysis of operational strategies and the impact of the project in attaining the goal of gender, and social development both at project and community level;</li><li>• Provide orientation to contractors and workers on application labor camp management and Occupational Health and Safety Guidelines and supervise the compliance of guidelines;</li><li>• Act as resource person in different a training course organized by LGED. Also act a Master to LGED appointed apprentices. These apprentices shall work under the direct management of the TL of the Program;</li><li>• Provide inputs into a training course for the project as required;</li><li>• Assist the PMU/PIU and TL in preparation of monthly, quarterly, semi-annual, annual and project completion reports</li><li>• Other duties as may be assigned by the Team Leader in consultation with the Project Director.</li></ul>
11.	Jr. Quantity Surveyor	<p>The Jr. Quantity Surveyor shall work under the supervision of the Program Team Leader. The tasks of Jr. Quantity Surveyor typically include, but not limited to the following:</p> <ul style="list-style-type: none"><li>• Review plans and drawings and prepare quantity needs;</li><li>• Set budgets for payments, inventory needs, and materials, verify proposed payment schedules of schemes;</li><li>• Develop Request for Proposal (RFP) documents for the proposed works;</li><li>• Identify, analyze and develop responses to financial risks;</li></ul>





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Local Government Division

Ministry of Local Government, Rural Development & Cooperatives



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		<ul style="list-style-type: none"><li>• Verify and examine interim payment certificates received from contractors, certify interim and final payment certificates;</li><li>• Estimate quantity and costs of materials;</li><li>• Measure quantities of work, record measurements and verify BoQ items / Work quantities executed in the contractor's monthly statement;</li><li>• Prepare tender and contract documents, including bills of quantities;</li><li>• Undertake cost analysis for repair and maintenance project work;</li><li>• Negotiate with contractors and subcontractors;</li><li>• Act as a liaison between clients and site managers/engineers;</li><li>• Keep track of construction materials and inventory;</li><li>• Identify potential financial or construction risks;</li><li>• Advise clients on improvements, strategies, and/or estimated costs;</li><li>• Perform risk, value management and cost control;</li><li>• Prepare and analyze costing for tenders;</li><li>• Provide advice on contractual claims;</li><li>• Prepare detailed work progress reports;</li><li>• Track changes in plans or constructions; update budgets etc.;</li><li>• Monitoring scheme cost and progress of works against the contract sums and submitted contractors' programs respectively;</li><li>• Preparation and submission of scheme cost reports;</li><li>• Maintain a permanent record of all measurements of the work quantities.</li><li>• Organize site meetings with stakeholders on the progress of executing works;</li><li>• Review construction methods with health and safety regulations;</li><li>• Provide inputs into a training course for the project as required;</li><li>• Assist the PMU/PIU and TL in preparation of monthly, quarterly, semi-annual, annual and project completion reports</li><li>• Other duties as may be assigned by the Team Leader in consultation with the Project Director.</li></ul>