TERMS OF REFERENCE FOR INDIVIDUAL CONSULTANTS AND CONTRACTORS

Title: Construction Manager (Civil Sanitary/Water Engineer)	**Funding Code:**	**Type of engagement** ☒Consultant (International) ☐ Individual Contractor Part-Time ☐ Individual Contractor Full-Time	**Duty Station:** Freetown, Sierra Leone (*in-country support with no provision for working remotely*)

The UNICEF WASH Programme seeks to hire a Consultant (Construction Engineer) to support the implementation of WASH in communities and institutions. The Consultant will work under the direct supervision of the Chief WASH, and in close collaboration with the Ministry of Water Resources and Sanitation, Ministry of Fisheries and Marine Resources, Ministry of Health, Ministry of Basic and Senior Secondary Education, and District Councils. S/he will be responsible for the design and construction administration in UNICEF-supported Districts in Sierra Leone.

Presently, the WASH facilities' construction is carried out through PCAs with I/NGO partners in compliance with UNICEF's policy on partnership. While government counterparts monitor the construction of WASH in Healthcare Facilities, schools (including ECD Centers), and communities; to ensure quality, proper design, and construction administration, as per design specifications and Terms of Agreement (ToA), UNICEF will make quality checks prior to payment at various stages of construction.
The UNICEF Construction Engineer will be responsible for reviewing each stage of construction and providing clearance before the next stage will begin. This will require frequent monitoring throughout the construction period. The construction component of the programme is managed by the WASH Specialists/Officers under the guidance of the Chief of WASH. With the scaling up of the field activity, there is a need for additional capacity to review the design and monitor WASH construction activities to enable early corrective actions to be taken to ensure timely completion. The Consultant is required by the Programme to ensure quality assurance throughout the construction management process, in line with the approved construction documents.

UNICEF signed the contributiuon agreement with Government of Iceland for $6.4M mainly for "Improving Access to Climate Resilient Water, Sanitation and Hygiene (WASH) Services for Improved Livelihoods and Child-Friendly Environment in Rural Fishing Communities". Meanwhile, the construction of WASH facilities are ongoing in eight communities and Institutions (PHUS and ECD centers and schools). There are also ongoing WASH construction activities under the USAID and for WASH in PHUs. The second phase of Iceland funded WASH programme implementation is about to start. Moreover, the drilling of boreholes and procurement of Pipes and Pumps under the second phase will be carried out this year. The consultant has to design the system after drilling the boreholes. To deliver results for children, UNICEF has ongoing partnerships with 6 I/NGOs as Implementing Partners-IPs under different grants. Engagement of NGO partners is also ongoing for 2024 WASH interventions through a Call For Expression of Interest (CFEI) and bidding process for engagement of drilling companies to drill boreholes. The project also aims at ensuring inclusiveness (girls and boys), suitability for use by children with disabilities, as well as adequate response to risks associated with extreme climatic events, particularly floods. However, some of the partners are facing challenges due to limited capacity to deliver the result on time. The Consultant is expected to provide technical guidance to the IPs on WASH engineering designs and ensure timely delivery of all the ongoing WASH installations.

Purpose and Objectives:

In close collaboration with the Ministry of Water Resources & Sanitation and Ministry of Health, and Ministry of Fisheries and Marine Resources the Engineer (Consultant) will lead and manage the construction of WASH facilities in schools, healthcare facilities, and communities. Further, S/he will provide technical assistance to IP and Government partners to build their capacity to monitor and supervise WASH facilities' construction by ensuring the required standard and quality of construction as per designs and specifications.

Methodology and Technical Approach:

The technical approaches to be employed by the Consultant include the following:

1. Conduct field assessment and design WASH facilities for second phase of Iceland funded project and review of existing designs/survey data for all the gravity-fed and solar-powered motorised systems.
2. Field visits – to verify the technical feasibility/ appropriateness of the selected sites. Also, to identify alternate sites if necessary.
3. Rectification of errors in the designs
4. On-the-job training of UNICEF and Government partners
5. Monitor construction activities.

Specific Tasks, Activities and Deliverables:

Task	Activities	Deliverables
1. **Review/ prepare the design of WASH Facilities Specifically the Gravity Fed Water Supply System (GFS) and lift system (drilling boreholes with solar-powered motorized pumps) with reticulation**	1.1 Review the engineering designs of ongoing projects considering the various important parameters such as planning standards, population projections, demand forecasting, design criteria, standard specifications, etc., based on the engineering standards and guidelines. Ensure clarity and understanding by the IPs and other relevant stakeholders. All the designs should conform to the best international/national engineering standards and norms. All necessary calculations should be prepared to determine and justify the engineering solution proposed for each project/ component and incorporated into the design reports. 1.2 Assess and recommend the appropriate level of costs and fees and tariffs, considering the issues of operation and maintenance, ensuring that the poorest of the poor have equal opportunity to access to WASH services. 1.3 Review all necessary drawings, technical	- Engineering designs based on the engineering standards and guidelines. - Drawings, technical specifications, bill of quantities (BOQ), detailed cost estimates, implementation schedule. - Appropriate level of costs and fees and tariffs. - Tender documents for future WASH construction interventions.

	specifications, bill of quantities (BOQ), detailed cost estimates, implementation schedule, etc. The technical specifications should be in accordance with the best international/national practices and should be prepared to achieve the highest standards of quality. 1.4 Prepare tender documents for future WASH construction interventions. 1.5 Carry out Value Engineering to generate the number of technically feasible designs for each subproject and work out the least cost alternative to ensure the best techno-economic designs.	
2. Construction Management	2.1 Monitor construction of all project components, review the claims, and verify works completed and in progress and certify for payment to the IPs. 2.2 Check line level, and layout of construction to ensure conformity with the contract, and propose any change in the plans, if required. 2.3 As per the standard Construction Management System, assess and enforce the adequacy of IPs' inputs in terms of material, equipment, construction machinery, workers, and construction approach and methodologies. 2.4 Monitor and enforce, as detailed in Safety Manual, the measures taken to ensure the workers' safety, other project personnel, the public and works. 2.5 Work as the engineer within the context of conditions of the partnership with I/NGOs (IPs) or contract with private sectors. 2.6 Regularly monitor physical and financial progress against the milestones as per the agreement to ensure completion of work on time. 2.7 Monitor and enforce Quality Assurance and Quality Control (QA & QC), the quality of inputs, processes, and outputs during all construction activities to ensure the highest quality of works conforming to the specifications and drawings. 2.8 Examine IPs' claims for a time extension, variations, additional	- Reports of construction of all project components emerging from monitoring visits based on Program Documents. - Quality Assurance and Quality Control (QA & QC) reports. - Maintenance procedures after physical completion of work

	compensation, etc., and recommend appropriate decisions. 2.9 After physical completion of work, prepare planned maintenance procedures; check installation and commissioning; monitor preparation of the "as-built drawings".	
3. Capacity Building of Government partners at the National and District level for Operational Sustainability .	3.1 Identify training needs, organize training courses, train government staff to enhance technical capacity focusing on the design and construction of WASH facilities. 3.2 Facilitate effective O&M post-construction period. 3.3 Review and revise the WASHCOM and Village Maintenance Worker (VMW) training materials.	- Report of training needs and trainings conducted for government staff - O&M manual - Revised WASHCOM and Village Maintenance Worker (VMW) training materials.

Management, Organization and Timeframe:

Chief of WASH and Ministry of Water Resources and Sanitation provides overall guidance and support to the Consultant to deliver the results mentioned above. The Consultant will prepare and present weekly progress updates (one-pager every Friday) and monthly progress reports against agreed targets at the end of each month and the final report at the end of the contract to the Supervisor.

Child Safeguarding

Is this project/assignment considered as "Elevated Risk Role" from a child safeguarding perspective?

☐ YES ☒ NO If YES, check all that apply:

Direct contact role ☐ YES ☐ **X** NO

If yes, please indicate the number of hours/months of direct interpersonal contact with children, or work in their immediately physical proximity, with limited supervision by a more senior member of personnel:

Child data role ☐ YES ☒ NO

If yes, please indicate the number of hours/months of manipulating or transmitting personal-identifiable information of children (name, national ID, location data, photos):

More information is available in the Child Safeguarding SharePoint and Child Safeguarding FAQs and Updates

*** Expected timelines for completion are estimated and may vary depending on progress**

Work Assignment Overview Tasks/Milestone:	Deliverables/Outputs:	Timeline	Payment
Task 1: Review/Prepare the Design of WASH Facilities Specifically the Gravity Fed Water Supply System (GFS) and drilling boreholes with reticulation: i. Review the engineering design of ongoing projects considering the various important parameters such as planning standards, population projections, demand forecasting, design criteria, standard specifications etc., based on the engineering standards and guidelines. ii. Assess and recommend the appropriate level of costs and fees and tariffs, considering the issues of operation and maintenance, ensuring that the poorest of the poor have equal opportunity to have access to the services. iii. Review all necessary drawings, technical specifications, bill of quantities (BOQ), detailed cost estimates, implementation schedule, etc. The technical specifications should be in accordance with the best international/national practices and should be prepared to achieve the highest standards of quality. iv. Prepare tender documents for future WASH construction interventions. v. Carry out Value Engineering to generate the number of technically feasible designs for each subproject and work out the least cost alternative to ensure the best techno-economic designs.	- Engineering designs based on the international/ national engineering standards and guidelines. - Drawings, technical specifications, bill of quantities (BOQ), detailed cost estimates, implementation schedule. - Appropriate level of costs and fees and tariffs. - Tender documents for future WASH construction interventions.	Within 4 months of starting	Monthly payment
Task 2: Construction Management		Within six months	

2.1 Monitor construction of all project components, review the claims, and verify works completed and in progress and certify for payment to the IPs. 2.2 Check line level, and layout of construction to ensure conformity with the contract, and propose any change in the plans, if required. 2.3 As per the standard Construction Management System, assess and enforce the adequacy of IPs' inputs in terms of material, equipment, construction machinery, workers, and construction approach and methodologies. 2.4 Monitor and enforce, as detailed in Safety Manual, the measures taken to ensure the workers' safety, other project personnel, the public and works. 2.5 Work as the engineer within the context of conditions of the partnership with I/NGOs (IPs) or contract with private sectors. 2.6 Regularly monitor physical and financial progress against the milestones as per the agreement to ensure completion of work on time. 2.7 Monitor and enforce Quality Assurance and Quality Control (QA & QC), the quality of inputs, processes, and outputs during all construction activities to ensure the highest quality of works conforming to the specifications and drawings. 2.8 Examine IPs' claims for a time extension, variations, additional compensation, etc., and recommend appropriate decisions. 2.9 After physical completion of work, prepare planned maintenance procedures; check installation and commissioning; monitor preparation of the "as-built drawings".	- Reports of construction of all project components emerging from monitoring visits based on Program Documents. - Quality Assurance and Quality Control (QA & QC) reports. - Maintenance procedures after physical completion of work		Monthly payment
Task 3: Capacity Building of Government partners at the		Within 8 months of consultancy	Monthly payment

National and District level for Operational Sustainability. 3.1 Identify training needs, organize training courses, train government staff to enhance technical capacity focusing on the design and construction of WASH facilities. 3.2 Facilitate effective O&M post-construction period. 3.3 Review and revise the WASHCOM and Village Maintenance Worker (VMW) training materials.	- Report of training needs and trainings conducted for government staff - Revised O&M manual - Revised WASHCOM and Village Maintenance Worker (VMW) training materials.		

Budget Year: **2024**	**Requesting Section/Issuing Office:** **WASH Programme Section**	**Reasons why work cannot be done by staff:** Requires specific technical skills & experience in WASH facility management approach and a substantial amount of time for the tasks**.**

Included in Annual/Rolling Workplan*:* ☐ **X** Yes ☐ No, please justify:

Consultant sourcing: ☐ National ☐**X** International ☐ Both **Consultant selection method:** ☐ Competitive Selection (Roster) ☐**X** Competitive Selection (Advertisement/Desk Review/Interview)	**Request for:** ☐**X** New Consultancy ☐ Extension/ Amendment
If Extension, Justification for extension: N/A	

Supervisor: Bishnu Timilsina	**Start Date:** May 1st, 2024	**End Date:** December 31st 2024	**Number of Months (working):** 8 months

Estimated Consultancy fee			
Travel International (one round trip)			
Travel Local (please include travel plan)			
Work Permit and other airport expenses (based on actuals)			
Total estimated consultancy costs[i]			

Minimum Qualifications required: ☐ Bachelors ☒ Masters ☐ PhD ☐ Other Enter Disciplines: Advanced degree (Master's or higher) in Civil/Sanitary engineering; Water Resources Management.	**Years of Experience and Knowledge/Expertise/Skills required:** • A minimum of eight years of relevant professional experience at national and international levels in water infrastructure, including the design of GFS, pumping systems, and WASH construction management. • Extensive experience with EPANET software and must have used EPANET to design or review water supply networks at least once in the past six months; experienced in ferrocement technology. • Experienced in the selection of pumps, solar panels, RSI and accessories for solar powered motorized system • Experience working with optimization of design or water management capacity building in Rural or large-scale systems. • Experience with quality assurance and site monitoring for civil engineering projects, including review of change orders, inspection of works, and reporting discrepancies. • Experience in contract administration and working with multiple stakeholders, especially government partners, in the management of various components of infrastructure contracts. • Strong communication skills and flexibility working with various government stakeholders. • Previous work experience with UNICEF or other international organizations working in the WASH Sector in developing countries is an asset. • Computer skills, including internet navigation and various office applications, including knowledge of AutoCAD and MIS/GIS applications. • Fluency in English is required.
Administrative details: Visa assistance required: ☒ Transportation arranged by the office: ☒	☐ Home Based ☒ Office Based: If office based, seating arrangement identified: ☒ TBD IT and Communication equipment required: ☒ Internet access required: ☒
Request Authorised by Section Head	

_____	**Request Verified by HR:** _____
Endorsed by Deputy Representative Programme _____	**Approved by Representative** _____

[i] Costs indicated are estimated. Final rate shall follow the "best value for money" principle, i.e., achieving the desired outcome at the lowest possible fee. Consultants will be asked to stipulate all-inclusive fees, including lump sum travel and subsistence costs, as applicable.

Payment of professional fees will be based on submission of agreed deliverables. UNICEF reserves the right to withhold payment in case the deliverables submitted are not up to the required standard or in case of delays in submitting the deliverables on the part of the consultant.

Individuals engaged under a consultancy or individual contract will not be considered "staff members" under the Staff Regulations and Rules of the United Nations and UNICEF's policies and procedures and will not be entitled to benefits provided therein (such as leave entitlements and medical insurance coverage). Their conditions of service will be governed by their contract and the General Conditions of Contracts for the Services of Consultants and Individual Contractors. Consultants and individual contractors are responsible for determining their tax liabilities and for the payment of any taxes and/or duties, in accordance with local or other applicable laws.