

“Strengthening the resilience to water, sanitation and hygiene-related diseases among Lebanese host communities and refugees from Syria in the Bekaa valley” A Project Funded by the Federal Ministry for Economic Cooperation and Development

TERMS OF REFERENCE OF CONSULTANT **“Design and Supervision Engineering Services”**

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1. BACKGROUND INFORMATION

1.1. Beneficiary country

Lebanon

1.2. Contracting Authority

World Vision Lebanon

1.3. Country background

Lebanon is regionally the country most impacted by the Syria crisis hosting more than 1 million Syrian refugees in the region. Within Lebanon, the Bekaa has been the area that the majority of arriving refugees have favoured. Based on results from the World Bank – the area around Zahle has been identified as the district 'most impacted' by the refugee arrival based on original population estimates and the existing rates of poverty pre-crisis. This heavy influx of people puts a strain on public services and has contributed to political and social tensions. The Public schools are completely overwhelmed, jobs, notably low skilled, rents have increased dramatically, the use of collective buildings or unfinished buildings for shelter and the tented settlements springing up, the pressure on the systems and structures within the Bekaa Valley have reached breaking points.

Overcrowded living conditions and the poor sanitation have left the Bekaa Valley in a delicate situation and present a great risk for the outbreak of diseases. The situation is compounded by approx. 4,500 households (household)/ 30,000 individuals staying in around 200 informal tented settlements. The pressure on the existing services including sanitation infrastructure, sanitation linkages and solid waste disposal, particularly in areas where there are no adequate disposal options has opened up risks of diseases and hygiene for both the refugees and the surrounding communities.

1.4. Current situation in the sector

World Vision (WV) has been operating in Lebanon since 1975, and in the Bekaa valley since 1999. WV has scaled up its operations in Lebanon, particularly in the Bekaa valley in response to the Syria crisis since 2012 through the provision of food vouchers, hygiene kits and WASH projects to the refugees in the ITS locations. With the ever increasing flow of refugees and the crisis stretching into the coming years, there is increasing recognition that agencies need to focus on supporting longer term solutions to structural concerns in order to better serve all those impacted by the crisis including the hosting communities. In attempt to improve the sustainability of WASH investments, WV is strategically pursuing WASH investments that will benefit both the Lebanese host-community and the Syrian refugees. This improved efficiency in WASH investment is in line with the 2015-2016 Lebanon Crisis Response Plan (LCRP), which guides Humanitarian actors within Lebanon.

In line with the 2012 National Water Sector Strategy of Lebanon, WV is partnering with the Bekaa Water Establishment (BWE) who initially focused on water to the target communities within the Bekaa, even though its mandate also includes sanitation. The Bekaa Water Establishment (BWE), which is responsible for the new sanitation Infrastructure in the targeted communities, is the owner of the project WV will retain the responsibility for the implementation. WV and BWE successfully cooperate in this way under an ongoing, Europe Aid-funded water Infrastructure project that takes place in the same target area and to which the proposed intervention is complementary. The idea of the proposed project was born through the close contact between WV and BWE and the local communities that emerged in the context of the humanitarian and development aid provided. WV worked together with the Bekaa Water Establishment (BWE) and the donor to identify the municipalities of highest need.

The BWE developed a matrix with projects (for example, existing wastewater network, wastewater treatment plant, wastewater collection, wells, manholes, groundwater etc.) that needed to be completed in order to meet the needs of beneficiary households. At coordination meetings between the WASH sector, BWE, and donors, the matrix was presented and several organizations expressed their support of different interventions. BWE and WV worked together to identify the outstanding districts and municipalities with the highest unmet needs. The specific district in Bekaa is Zahle. The selection of sites for intervention was based on a detailed analysis of need (including mapping existing tubes) in addition to a highly consultative process with other partners and stakeholders to avoid overlap. Following these discussions, two municipalities in the Bekaa were selected for support for the new Sanitation Infrastructure.

1.5. Related programmes and other donor activities

World Vision will provide support to enhance basic infrastructure in Lebanon in general and the communities in Ablah and Majdl Anjar in particular, through investing in improving the sanitation infrastructure network. The **overall objective** to which the project seeks to contribute is to contribute to improve public health among Lebanese host communities and Syrian refugees in the Lebanese Bekaa valley by strengthening the resilience of host communities and refugees in Ablah and Majdl Anjar through improving access to sustainable sanitation and good hygiene behaviours. This Scope of Work will help ensure that this goal is successfully met. This project will be coordinated closely with the Bekaa Water Establishment and related municipalities, who are responsible for coordinating all water and wastewater interventions with the Bekaa valley.

2. OBJECTIVE, PURPOSE & EXPECTED RESULTS

2.1. Overall objective

The overall objective of the project of which this contract will be a part is as follows:

The project seeks the services of a professional consultant (engineering firms) with substantial experience in design, supervision and construction management for water utilities and sanitation Infrastructures.

The consultant shall support World Vision (WV) in expanding the new sewage network for the Bekaa Water Establishment, within the communities of Ablah and Majdl Anjar. The consultant shall be accredited by the Lebanese Energy and Water Ministry. The preliminary identification of sewage tubes is described and shown in Annex I and figures 1 and 2,

2.2. Purpose

The purpose of this contract is to hire a consultancy firm to support World Vision in the design phase, bidding phase and at the construction phase. The consultant shall provide engineering services as detailed in the below purpose:

Purpose 1- Develop a satellite imagery acquisition used as a base Map for the area of operation (Ablah and Majdl Anjar)

Purpose 2- Perform a field investigation and data collection for the area of operations including all needed information for the project implementations such as the location of manholes and pipelines and which Waste Water Treatment Plant to discharge.

Purpose 3- Develop an assessment of the sanitation infrastructure, estimated sewage flow production in Ablah and Majdl Anjar areas.

Purpose 4- Develop an Environmental Impact Assessment for the project areas, arrange a meeting with stakeholders and public hearings in both areas and develop any mitigation measure that the project should take.

Purpose 5- Develop a Sanitation Infrastructure Master Plan and Concept Design including the topographic survey of the sewage tubes routes and a complete modelling of the sewer network.

Purpose 6- Develop the Detailed Design and Tender Documents for a length up to 12 km.

Purpose 7- Monitor construction

Purpose 8- Update the 'Sanitation Infrastructure Master Plan' with the As-Built drawings at the end of the project

2.3. Results to be achieved by the Consultant

The results are detailed in the scope of work under the paragraph 4. As payment will be made based on the deliverables of the service requested on the due date and agreed fees.

3. ASSUMPTIONS & RISKS

3.1. Assumptions underlying the project

One of the main preconditions and assumptions made is that households will buy in to the intervention. Once the construction works are completed, it will be the responsibility of the households and the BWE to register the new connections. The project team will provide the necessary information to the households in cooperation with the BWE. The practice in Lebanon is that users pay a yearly subscription fee and the assumption made here is that households are ready to make that financial contribution once the network has been completed. WV and the BWE will raise awareness throughout the project. From here, a further assumption made is that the BWE will have the financial capacity (and continued technical capacity) to respond to any maintenance needs that arise once WV has successfully completed the proposed action. The onus will be on the BWE to respond to the individual needs of households, including but not limited to, any leaking pipes, loose connections, lack of water, etc.

The expansion of the waste water network was designed with a time horizon of 20 years. A longer perspective was not seen as useful, as the pipes then might be too big to function as planned with the current population size.

In addition, the contamination of ground water shall be reduced; the water network in both targeted communities has been expanded by other actors in the past and this will help to preserve these gains.

For political reasons, the inhabitants of the informal tented settlements in Majdl Anjar cannot be directly connected to the public network. However, their situation can be improved by enabling the private service providers that desludge their emergency latrines to dump the sludge into the public network through a manhole that will be laid in the vicinity of the ITS. Hence there is a contribution to reducing environmental pollution.

Another precondition is that the situation does not deteriorate. Bekaa is the host region of the majority of refugees in Lebanon meaning that tensions among host communities and refugees remain high. With a relatively stable security situation and by maintaining constant open communication with beneficiaries, it will be made clear that the proposed action will alleviate the pressures felt among both groups.

3.2. Risks

The risk and mitigation measures related to the Design and Supervision Engineering Services. Is listed in the below table:

Key Risks	Likelihood	Potential Impact	Mitigating Strategy
The Bekaa Water Establishment and the municipalities cannot agree on the operating conditions for the wastewater networks; required permits cannot be obtained	Low to medium	High	WVL has made good experiences regarding cooperation with the relevant actors in the ongoing water Infrastructure project in Ablah. A Memorandum of Understanding will be signed at project beginning laying down responsibilities and contributions.
Construction works are more expensive than estimated, e.g. as a result of the ground being different	Low	High	The first technical design was done partly in cooperation with a Lebanese engineering firm and validated by the BWE. At project beginning, an engineering firm will do a detailed technical assessment to validate and refine the initial estimates. In the ongoing infrastructure project, this step revealed a conservative first assessment.
Necessary expertise is not available in Lebanon	Low	Medium	The tender process for the water infrastructure project in Ablah has shown that there are enough well versed technical companies in Lebanon for this task
Price increases	Medium	High	The contracts with the construction companies are concluded in EUR.
Infrastructure works are not done according to standards	Low	Medium	Implementation brings together the experience and expertise of various actors: BWE, municipalities, construction company, engineering firm. There will be close monitoring of construction progress and a joint handover.
Household do not register with the BWE	Low	High	If the household don't register, they may officially not link in with the network. However, this risk is seen as low, as it should be more economical to pay the registration fee than to continue with private desludging companies. WVL will sensitize the population on this matter during information sessions.
The BWE does not support / maintain the new infrastructure adequately	Low	High	An Letter of Intent has already been concluded where the BWE signals its support for this project. An MoU at project beginning will detail each party's responsibilities and contribution to the project. The estimated additional work needed to support the new Infrastructure is small.
Additional costs needed at the waste water treatment plant cannot be covered or are higher than anticipated.	Low	Medium – high	Ablah municipality has assured the project team that they can cover the additional cost needed for treating more sludge at their facility. A strong price increase e.g. of electricity cost would not only affect this project, but all other areas of daily life. WVL would support in finding solutions in such a case.
Security situation deteriorates	Medium	High	The security situation remains volatile and difficult to predict. This can lead to disruptions in the project at any time. Should this occur,

			<p>project planning has to be adjusted accordingly. WVL's security staff monitor the situation continuously and decide on the measures required. All staff regularly receives security updates. Travels have to be announced prior to departure.</p>
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4. SCOPE OF THE WORK

4.1. General

4.1.1. Description of the assignment

World Vision will rely on the engineering firm to map the available Infrastructure facilities in Ablah and Majdl Anjar and develop the work plan and needed design to perform the project. The Consultant will work closely with the Project team (Project Manager, WASH engineer) providing the construction team with technical considerations during implementation as well as standards and guidelines to adhere to. The Engineering consultancy firm will also support in environmental impact assessments and bid analysis and the evaluation of the contractor works.

In order to support World Vision, the Consultant shall provide engineering services during 3 phases:

- 1- The Design Phase
- 2- The Bidding Phase
- 3- The Construction Phase.

4.1.1.1- THE DESIGN PHASE

The Design Phase of the project consists of the major tasks summarized below:

4.1.1.1.1- Satellite Imagery acquisition: 2016 Orthorectified Imagery shall be used as a base map, covering all the project area. Images will be tied to the Lebanese Stereography Topography National Grid coordinates. Also, a Digital Elevation Model (pixel size: 0.5 meter minimum) is required.

4.1.1.1.2 – Draft Specification and BOQ: Develop a draft specification of sewer and BOQ of sewer pipes and manholes materials to be used in the first 15 days after agreement signature.

4.1.1.1.3- Field investigation and data collection: An initial study of all available information related to the project area shall be carried out. The study shall include existing sanitation Infrastructure utilities (e.g. potable and irrigation water sources, treatment and pumping stations, storage reservoirs, water network), along with relevant other utilities (sewage network, telecommunications network, sidewalk, electricity lines, asphalt thickness), recent improvements carried out, and all information on future plans for utility expansion. Sources of information shall include World Vision, governmental authorities, municipalities, private utility companies and all information available from previous and ongoing studies.

Based on primary data collection, cadastral maps and data available with World Vision, Bekaa Water Establishment and the concerned municipalities, the Consultant shall collect complete information about the existing sewer system, sanitation Infrastructure sources and flows (quality and quantity per season), reservoirs, pumping and treatment stations, water meters (bulk and household), household connections and water use records, manholes. The Detailed Information should include Historical data, operation, Maintenance, finding and gaps with available funding sources.

A detailed engineering survey and reconnaissance of the project area shall be carried out to identify and evaluate site constraints, develop options for these constraints and identify appropriate alternatives.

A detailed field survey shall be carried out in every village in the project based on the satellite imagery of all houses, schools, hospitals, and other potential water users, in order to identify the wastewater volume produced by users in each branch of every village. This shall also cover: deficiencies in the existing service systems, capacities of existing sanitation infrastructure systems, improvements required, visual evaluation of the condition of existing structures, general characteristics of related roads and sites.

4.1.1.1.4- Sanitation Infrastructure, sludge and sanitation needs: Based on field investigations and collected data, the objective of this study is to determine the sludge and sewage volume discharged in the sewer network in the study area, as well as to estimate the sludge flow up to year 2040

4.1.1.1.5- Environmental Impact Assessment (according to Decree N 8633 dated 16/8/2012): To understand the environment-related aspects of the project, a detailed Environmental Analysis and Assessment study is required. The study will involve collection and analysis of information regarding the environmental issues related to the project and preparation of an Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP), to be duly integrated in the overall design of the project.

4.1.1.1.6- Sanitation Infrastructure Master Plan and Concept Design: Based on the Satellite Imagery and DEM, field correction will be made by the surveyor's team. A topographic survey of the sewage line shall be carried out for the production of the necessary mapping. A Concept Design including a complete modelling of the sewage network and a complete calculation of the appropriate sizing of the sewage lines will be produced and represented in a digital Sanitation Infrastructure Master Plan for each of the two communities. AutoCAD and ArcGIS shall be used to develop the Sanitation Infrastructure Master Plan. This Master Plan will highlight the sections of tubes that will be the priority for replacement and extension, reflected in various phases of development.

4.1.1.1.7- Detailed Design and Tender Documents: Finalize Sanitation Infrastructure Master Plan including drawings, cross sections, typical details, specifications, conditions of contract, bill of quantities and cost estimate per phase of execution, in addition to any other documents needed to have a complete tender dossier for works execution, all these documents must be prepared in English. The project deliverables shall be divided into 2 phases/bid packages, as reflected in the Sanitation Infrastructure Master Plan: Phase 1 mandatory (funding certain), Phase 2 optional (funding uncertain). There is a need to split the detailed Design and tender documents per geographic area, so that Contractors will be able to present the quotation for each of the Ablah tender document and Majdl Anjar tender document or for both.

Numerous coordination meetings will be required from the Consultant during the Design Phase to complete the works, in addition to some workshops (to explain and discuss the design with all parties involved) that will require the Consultant to prepare materials and provide appropriate leadership.

4.1.2. Geographical area to be covered

The Bekaa Water Establishment (BWE) and World Vision worked together to identify the outstanding districts and municipalities with the highest unmet needs. The specific district in Bekaa is Zahle. The selection of sites for intervention was based on a preliminary analysis of need (including mapping existing lines) in addition to a highly consultative process with other partners and stakeholders to avoid overlap. Following these discussions, two municipalities in the Bekaa were selected for support for Sanitation Infrastructure. The two municipalities in the Bekaa are Ablah and Majdl Anjar. The proposed intervention links to the sector of reconstruction of basic infrastructure shown in Figures 1 and 2:



Figure 2 :Proposed expansion of the sewage network in Ablah

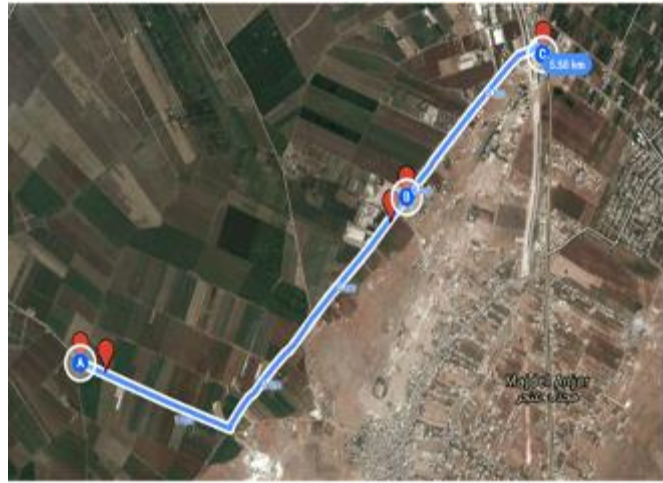


Figure 1: Proposed expansion of sewage network in Majdl Anjar

4.1.3. Target groups

The target group is the Lebanese host communities and the Syrian Refugees living in Ablah and Majdl Anjar.

- Approx. 2000 pers, 400 households in Ablah and Majdl Anjar, 200 households per village, to connect their sanitation facilities with the public sanitation network. Based on a household size of 5.
- The farmers in Ablah will benefit as they can use the additional treated sludge for irrigation/fertilizing their fields.

4.2. Specific work

The Specific work is listed as per the below steps that the consulting engineering firm will be following during the 3 phase of Design, Bidding and Construction.

4.2.1- The steps for the **Design Phase** are listed below:

- 4.2.1.1 Satellite Imagery acquisition as detailed above
- 4.2.1.2 Field Investigation and data collection as detailed above
- 4.2.1.3 In depth Environmental Impact Assessment (EIA) Report with community meetings and approval from the related ministries.
- 4.2.1.4 Sanitation Infrastructure and Estimated sewage flow Assessment Report;
- 4.2.1.5 Pipeline sizing calculation with pipeline network model;
- 4.2.1.6 Digital Sanitation Infrastructure Master Plan (using AutoCAD and ArcGIS);
- 4.2.1.7 A workshop to present and discuss pipeline network model and Sanitation Infrastructure Master Plan and Concept Design to the Bekaa Water Establishment, municipalities and other stakeholders, including practical training on the full use of the digital mapping/design Master Plan tools;
- 4.2.1.8 Revision of final pipeline sizing calculation, pipeline network model and Master Plan;
- 4.2.1.9 Layout drawings for proposed pipeline routes with topographic survey information;
- 4.2.1.10 Workshop to present and discuss layout drawings for expanded sewer network with topographic survey information;
- 4.2.1.11 Revision of final layout drawings for proposed pipeline routes with topographic survey information;
- 4.2.1.12 Detailed design, drawings and profiles;

- 4.2.1.13 Workshop to present and discuss detailed design, drawings and profiles;
- 4.2.1.14 Revision of final detailed design, drawings and profiles;
- 4.2.1.15 Complete tender documents including drawings, bill of quantities, cost estimate, technical specifications and conditions of contract for Phase 1 and Phase 2 of the Sanitation Infrastructure Master Plan;
- 4.2.1.16 Workshop to present and discuss tender documents with WV, Bekaa Water Establishment and municipalities if needed.
- 4.2.1.17 Revision of final tender documents.
- 4.2.1.18 Signing off the tender documents by WV Project Manager and Bekaa Water Establishment in preparation for the bidding process.

The Consultant shall address all review comments provided by WV and Bekaa Water Establishment to the satisfaction of WV. Any review comments which are not addressed satisfactorily may require an additional submittal to address the comments.

4.2.2- The steps for the **Bidding Phase** are listed below:

- 4.2.2.1 Tender (for works execution) publication (by WV).
- 4.2.2.2 Pre-bid site visit / meeting conducted by WV (and Consultant if needed);
- 4.2.2.3 Collection of questions (requests for clarification) from bidders (by WV), Consultant to address all queries;
- 4.2.2.4 Addendum to tender documents to address bidders' questions and other issues discovered during the bidding process (by Consultant after comments and approval of WV);
- 4.2.2.5 Bids collection (by WV);
- 4.2.2.6 Anonym Bids analysis (by consultant) to be validated by WV Committee;
- 4.2.2.7 Revise Contract Conditions by consultant validated by World Vision;
- 4.2.2.8 Contract award (by WV);
- 4.2.2.9 Project launching (kick off meeting) where all stakeholders (WV, Bekaa Water Establishment, related municipalities and the selected contactors) will be available to launch the work. The site will be delivered to the awarded contractors and the work will start officially. The role of the consultant is to coordinate for this meeting, ensure that contractor has the recent Maps, tender documents and needed information. The Consultant whom will be preparing a **check list** need to insure that all the check list is met and the work can be started.

4.2.3- The steps for the **Construction Phase** are listed below:

- 4.2.3.1 Daily monitoring of construction activities for quality assurance (by WV Site Engineer);
- 4.2.3.2 Conduct periodic site meetings with Contractor and complete minutes of meetings (by WV Site Engineer);
- 4.2.3.3 Site inspection visits for works monitoring (maximum 3 times per month) and office work/meetings (1 time per month) (by Consultant), during the construction phase upon Project Manager Request.
- 4.2.3.4 Review of shop drawings (by Consultant, if needed);
- 4.2.3.5 Address Requests for Information (by Consultant, validated by World Vision Project Manager);

- 4.2.3.6 Review Requests for Variation Orders and participate in Variation Order negotiations between WV and Contractor (by WV Site Engineer, with Consultant's support if needed, but Approving any changes in the variation order will be the responsibility of the WV Project Manager);
- 4.2.3.7 Ensure that Contractor is completing Quality Control program and review results and submittals (by WV Site Engineer);
- 4.2.3.8 Develop punch list and assure that Contractor completed all items (by WV Site Engineer);
- 4.2.3.9 Inspection of completed works (by WV Site Engineer and Consultant);
- 4.2.3.10 Preparation of payments to Contractor (by WV Site Engineer, but the approval will be the responsibility of the WV Project Manager);
- 4.2.3.11 Review Contractor's As-Built drawings and update the digital Sanitation Infrastructure Master Plan to reflect the completed works (by Consultant);
- 4.2.3.12 Refresher Training Workshop (estimated to take 2 days) with the Bekaa Water Establishment and other key stakeholders of the full use of Sanitation Infrastructure Master Plan tools (e.g. mapping/design) (by Consultant – Other than the Public Hearing Meetings)
- 4.2.3.13 Submission of a final technical report (by Consultant) to be included in the Final Project Report (to be prepared by WV and submitted to the Donor);
- 4.2.3.14 Submission of interim report (4 per year) to be included on the interim report (to be submitted to the Donor).

The Engineering firm and the Contractor must also comply with the latest Communication and Visibility Manual for World Vision and the Federal Ministry for Economic Cooperation and Development Of Germany.

4.3. Project management

4.3.1. Responsible body

The Project Manager within World Vision Lebanon is responsible for managing the contract and the project. World Vision Lebanon's Procurement Committee is responsible for the bidding process for consultancy and contracting services.

WVL as the application will implement the projection cooperation with world vision International in Lebanon (WVL) who bears the responsibility for implementing activities in country.

4.3.2. Management structure

WV employed a Project Manager to maintain day to day management and oversight of the action. The Project Manager (PM) holds several key responsibilities to ensure successful implementation. First, the PM will monitor day to day implementation of the action and communicate successes and challenges to WV and the donor. He will be responsible for submitting periodic reports in line with internal WV requirements and donor regulations, as needed. The PM will be the relationship holder with local municipalities, the BWE, the consultant, local and international NGOs (via UN-led and donor-led coordination meetings and working groups), and beneficiaries. This person will be on the hiring committee of key positions (including the engineer consultant) and coordinate with him throughout the life of the proposed action to ensure smooth implementation. The consultant will take a hands-on approach of ensuring the proposed action is executed successfully. He will be involved in the review of contracts and tendering for the different works to be completed. A Finance Officer will be employed to manage the budget, maintain timely expenditures, and review expenses and related invoices. A

percentage of WV's WASH specialist's time will be dedicated to this action providing technical oversight and building the capacity of staff, as needed. WV will rely on support by the consultant to ensure the construction works to be undertaken in this action are sound and efficient for the communities who will benefit. The Consultant will work closely with the WASH specialist providing the construction team with technical considerations during implementation as well as standards and guidelines to adhere to.

4.3.3. Facilities to be provided by the Contracting Authority and/or other parties

Under this scope of work, the engineering consultancy firm will be responsible for the rent of facilities and transportation means required in accomplishing the tasks. World Vision is not responsible to pay any fees outside to the scope of the work, not included in the Consultant's bid, and the Engineering firm will be responsible to pay any fees for logistics for their staff and any insurance required for their personnel, contractors and vehicles.

5. LOGISTICS AND TIMING

5.1. Location

Majdl Anjar, Ablah Municipalities; Bekaa Region.

5.2. Start date & Period of implementation of tasks

The intended start date is December 23rd 2016. The Deadline to implement the specific work under section 4.2.1 from 4.2.1.1 till 4.2.1.18 will be a maximum period of 6 weeks.

The Consulting firm might be requested to support in the bidding process that will be done based on the donor requirement, based on a daily rate per expert and pre approval on this service by the Project Manager at World Vision.

The construction phase will start after the bidding process as per the donor regulations is complete. Construction works have to be completed within a period of 12 months, including the days off, weekends and public holidays.

In the case that 'Phase 2' of the Master Plan is funded (refer to Section 4.1.1.1.6), it may be necessary for the Consultant to extend services as outlined under the Construction Phase (refer to Section 4.2.3), in proportion to the amount of work executed under 'Phase 2', which will be dependent on available funds. The Consultant shall use the same daily rates during a potential 'Phase 2' extension, as was included in the bid for 'Phase 1'. Any 'Phase 2' extension of the Consultant's services will be at the discretion of World Vision.

Payments to Consultant will be made upon completion of each step/phase (or upon submission of each document/deliverable when applicable). The payment details will be detailed in the agreement that will be signed.

After the completion of the construction works, Consultant shall review and submit, within a period of 1 month, the As-Built drawings that will be prepared by Contractors, along with the updated digital Master Plan, as well as all invoices related to the project.

The Bidder has to submit the daily rate per experts hired by the consultant; the rates should include the field rate and the office rate, if differing.

6. REQUIREMENTS

6.1. Staff

Note that civil servants and other staff of the public administration of the partner country, or of international/regional organisations based in the country, shall only be approved to work as experts if well justified. The justification should be submitted with the tender and shall include information on the added value the expert will bring as well as proof that the expert is seconded or on personal leave.

6.1.1. Key experts

The Consultant shall list the key experts to work on this project with their qualifications as well as their daily rate service that will be requested during the implementation of the Bidding and Construction phases.

The key experts are defined and they must submit CVs and signed Statements of Exclusivity and Availability. All experts who have a crucial role in implementing the contract are referred to as key experts. The profiles of the key experts for this contract are as follows:

Below are Keys Experts required with set of qualifications, skills and professional experience?

6.1.1.1. Expertise in Environmental Impact Assessment (EIA)

- Bachelor's degree (or equivalent) in engineering, environmental economics, environmental sciences or related disciplines. Master's degree preferred
- At least five (5) years of relevant experience
- Experience in the implementation of sewage network EIA, mainly preparing EIA reports for major Infrastructure projects, reviewing EIA statements
- Familiarity with international best practice in her/his field of expertise would be an advantage
- Prepared and develop a similar EIA and approved by related ministries
- Excellent written and spoken English; Arabic preferred
- Experience in leading / facilitating public hearing with different communities.

6.1.1.2. Expertise in Designing Master Plans for Piped Sewer Network

- Bachelor's Degree or its equivalent in hydraulic engineering or related field. Specialization in planning, design and management of piped sanitation Infrastructure schemes. Master's degree preferred
- Minimum 10 years of experience in sewer sector projects for activities supporting the development of sanitation Infrastructure master plans, pipeline design and optimization (e.g. water flow models), and projects implementation.
- Experience in at least three projects in the sewer sector (of minimum 2 years each), regarding sanitation Infrastructure systems, during the past 10 years desired.
- Experience in management of public utilities of the sewer sector will be an asset.
- Excellent written and spoken English and Arabic languages.

6.1.1.3. Expertise in Digital Spatial Mapping

- Bachelor's degree or its equivalent in Engineering, Environmental Science/Planning, Geography/Geographic Information Systems (GIS), or related discipline.
- Five (5) years relevant professional experience.

- Expert in principles and practices of AutoCAD and GIS and Remote Sensing theory, data collection and mapping.
- Capability to lead and validate the work of the surveyor
- Excellent written and spoken English and Arabic languages.

6.1.2. Other experts, support staff & backstopping

CVs for experts other than the key experts should be submitted in the tender but the tenderer will have to demonstrate in their offer that they have access to experts with the required profiles. The Consultant shall select and hire other experts as required according to the needs. The selection procedures used by the Consultant to select these other experts shall be transparent, and shall be based on pre-defined criteria, including professional qualifications, language skills and work experience.

The costs for backstopping and support staff, as needed, are considered to be included in the tenderer's financial offer.

6.2. Office accommodation

Office accommodation for each expert hired by the Engineering consultancy firm working on the contract is to be provided by the Consultant.

6.3. Facilities to be provided by the Consultant

The Consultant shall ensure that experts are adequately supported and equipped. In particular, it must ensure that there is sufficient administrative, secretarial and interpreting provision to enable experts to concentrate on their primary responsibilities. It must also transfer funds as necessary to support their work under the contract and to ensure that its employees are paid regularly and in a timely fashion.

6.4. Equipment

No equipment is to be purchased on behalf of World Vision Lebanon as part of this service contract or transferred to the World Vision Lebanon at the end of this contract. Any equipment related to this contract which is to be acquired by the World Vision Lebanon must be purchased by means of a separate supply tender procedure.

6.5. Professional indemnity Insurance.

Professional Indemnity Insurance is a requirement from the consultant. This insurance is to cover the consultant against legal liabilities arising from acts of negligence, error, omission or breach of professional duty during the ordinary course of professional performance.

The insurance policy will be for a period, of 1 year, with an extension of reporting period for another 1 year.

The indemnity coverage will have a limit of \$100,000 USD.

Indemnity could include the compensatory damages as well as defense cost.

The policy covers bodily injuries or material damages.

7. REPORTS

7.1. Reporting requirements

The Consultant will submit the following reports in English in one original and 2 hardcopies and an electronic copy:

- **Inception Report** of maximum 12 pages to be produced after one week, or other reasonable deadline from the start of implementation. In the report the Consultant shall describe e.g. initial findings, progress in collecting data, any difficulties encountered or expected in addition to the work programme and staff travel. The Consultant should proceed with his work unless the Contracting Authority sends comments on the inception report.
- **Interim Reports** are required. The interim reports are both verification tools (e.g. satellite imagery) and stand-alone reports (e.g. Sanitation Infrastructure and Demand Report, Environmental Impact Assessment, etc.), which will include each one of the eight project purpose listed in paragraph 2.2.
- **Draft final report** of maximum 20 pages (main text, excluding annexes). The format of the Final report will be shared by World Vision in separate communication 1 month before the deadline to submit the draft report. This report shall be submitted no later than one month before the end of the period of Construction phase.
- **Final report has** the same specifications as the draft final report, incorporating any comments received from the parties on the draft report. The deadline for sending the final report is 10 days after receipt of comments on the draft final report. The report shall contain a sufficiently detailed description of the different options to support an informed decision on the Construction Phase done by the hired contracting firm, as well as sufficiently detailed description to guide the Bekaa Water Establishment on the use of the Sanitation Infrastructure Master Plan. The detailed analyses underpinning the recommendations will be presented in annexes to the main report. The final report must be provided along with the corresponding invoice.

7.2. Submission and approval of reports

The report referred to above must be submitted to the Project Manager identified in the contract in due date, including all needed information and using the predefine templates. The Project Manager is responsible for approving the reports.

As detailed in the agreement that will be signed between World Vision and the Consultant, all specific documents that need to be submitted with the report to issue the payments will be listed.

Payments to Consultant will be made upon completion of each step/phase (or upon submission of each document/deliverable when applicable). After the completion of the works, Consultant shall review and submit, within a period of 1 month, the As-Built drawings that will be prepared by Contractor, as well as to update the 'Sanitation Infrastructure Master Plan' with the As-Built drawings, along with the relevant invoices related to the project.

8. MONITORING AND EVALUATION

8.1. Definition of indicators

The Consultant's work will be measured in line with the below standard indicators:

Time: Adhering to the agreed-upon schedule/work plan in the bid.

Quality: Adhering to the minimum professional quality of each project deliverable.

8.2. Special requirements

- 8.2.1 Bidder has to submit his price for each step/deliverable within this Scope of Works.
- 8.2.2 Bidder has to submit a detailed work plan including the delivery date of each step/deliverable within this Scope of Works, at the design phase, bidding phase and the construction phase.
- 8.2.3 Bidder has to submit a Commercial Register (in case of a design firm).
- 8.2.4 Bidder has to submit a portfolio (company profile in case of a design firm).
- 8.2.5 Bidder has to submit the names, titles and CVs of the Engineers that will be part of the design and supervision team. Any change of these key personnel will require the approval of World Vision.
- 8.2.6 Bidder has to submit a list of previous similar projects executed along with their amounts.
- 8.2.7 Bidder has to include in his quotation all expenses (transportation, phone bills, and insurance policies) and all applicable taxes (income tax, other taxes, custom duties and VAT). WV will not pay any other extra fees.
- 8.2.8 Payments to Consultant will be made upon completion and approval of each step/phase (or upon submission of each document/deliverable when applicable).
- 8.2.9 After the completion of the works, Consultant shall review and submit, within a period of 1 month, the As-Built drawings that will be prepared by the Contractor and update the digital Sanitation Infrastructure Master Plan, as well as his invoices related to the project.
- 8.2.10 Bidder has to submit the daily rate per experts hired by the consultant; the rates should include the field rate and office rate, if differing.

9. ANNEX 1: PRELIMINARY INFORMATION ON THE PLANNED EXPANSION OF THE SANITATION NETWORK ARE PROVIDED IN THE TABLE BELOW

#	GPS		Intervention	Material	Notes from initial assessment	Estimated length
	Start Point	End Point		New		
1	33.871748,35.955700	POINT: 33.865273,35.95638 1 END: 33.864725,35.95709 5	New	30cm (~12") concrete pipes	Distance is about 700m. Includes secondary road until POINT and then another approx. 130m along the river/ side of the road where water run-off exists to END.	850m
2	33.864725,35.957095	33.866187,35.96576 6	New	30cm (~12") concrete pipes	Pipe continues from above. Distance	920m

					about 1km. Ends at the connection to pipe leading directly to water treatment station (only a few meters away).	
3	33.713999-35.872772	POINT: 33.725365-35.904539 END: 33.735231-35.917806	New	30cm (~12") concrete pipes	Distance is about 5580 meters	5600m

Based on the community need and on the donor funding, the network expansion might not just be restricted for Majdl Anjar and Ablah, the design will be as per kilometer and we could reach up to 12 Km.