

TERMS OF REFERENCE

FOR DETAILED DESIGN REVIEW AND CONSTRUCTION SUPERVISION CONSULTANT

A. Background

1. The Government of the Republic of Uzbekistan (the Government) has received financing from the Islamic Development Bank (ISDB) and OPEC Fund for the implementation of the Project “Reconstruction and modernization of M39 Highway “Almaty-Bishkek-Tashkent-Shahrisabz-Termez” on section km 1255 to km 1315”. The Project consists of a total length of 60 km, divided on three lots.

2. The M39 public road of international importance, as an integral part of the Uzbek National Highway, forms the southern transport corridor, which allows effective integration into the international transport system in all directions. The highway has a total length of 658 km, providing reliable interregional and international transport links, passes through the territories of six regions of the country: 65 km through the territory of Tashkent, 44 km through the territory of the Syrdarya, 98 km - Jizzakh, 98 km - Samarkand, 180 km - Kashkadarya and 143 km - Surkhandarya. It is part of international transport corridors, such as the Trans-Afghan International Transport Corridor, E-40, E-60, E-123, AN-5, AH-62, AH-65, Traceca-22, Traceca-23, Traceca-26.

3. The road section will be divided into three lots. The project will be implemented through three civil works contracts with an estimated construction duration of 36 months for each Lot with 24 months for Defect Liability Period (DLP). The consultant is expected to be on board twelve months before contractors’ mobilization (Detailed Design Review/Road Safety Audit – 6 months plus Procurement Support to the EA and PIU – 6 months). It is assumed that the total involvement of the consultant / duration of the contract will be 72 months. The consultant must calculate and propose the necessary personnel and the period of their involvement for the DLP.

4. The Avtoylinvest Agency (AA) under Committee for Roads (CR) under the Ministry of Transport (MoT) (Executing Agency – EA) of the Republic of Uzbekistan will procure these contracts as per Procurement Plan, under the International Competitive Bidding procedures of Guidelines for Procurement of Goods, Works and Related Services under IsDB Project Financing (April 2019, as amended from time to time). An appropriate IsDB Standard Procurement Documents for Goods, Works and Services will be used with minimum changes, acceptable to IsDB, as necessary to address country and project specific issues.

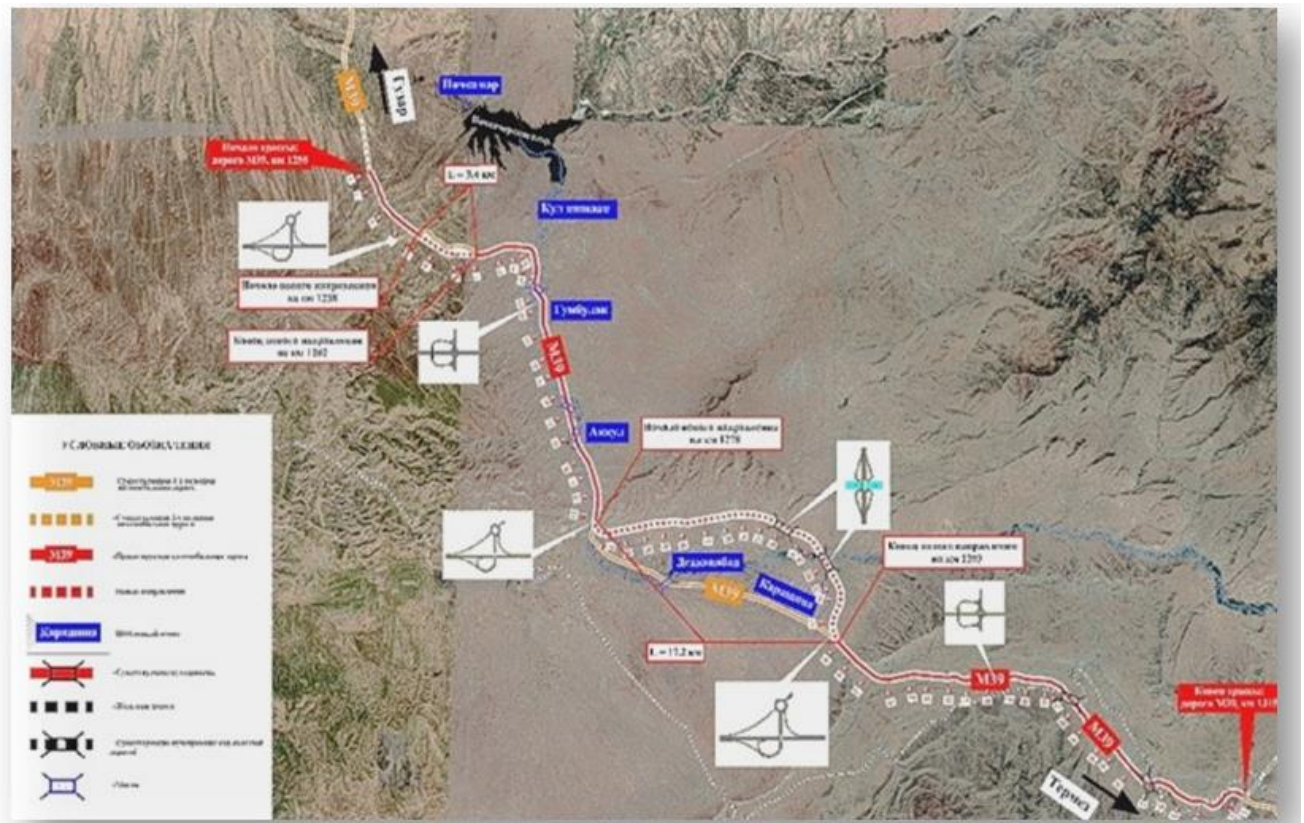
The EA now wishes to engage a Consultancy firm for detailed design review and construction supervision based on the QCBS-MC method (the proportional weights are set at eighty (80) points for quality and twenty (20) points for price) with shortlist of firms from IsDB Member Countries. The consultant is expected to be on board twelve months before contractors’ mobilization. The consulting services will involve, but not be limited, to review the detailed design prepared by Local design institute, assistance in preparation of Bidding Documents for Construction and help through Evaluation process, procurement of Wight in Motion Systems, validation of final ‘issued for construction’ (IFC) drawings, supervision and certification of all the works under the civil works contracts, civil works contracts administration, benefit monitoring and evaluation and assistance in increasing the employer's capacity on Safeguards measures within the framework of IsDB policies and procedures, and “transfer of knowledge” (training) for road maintenance, application and development of toll roads. In addition, an Environmental and Social Management Plan (ESMP) will be prepared by the Consultant in order to provide an implementation mechanism for the mitigation measures. The key elements of the ESMP include institutional setup, mitigation plan, monitoring plan, reporting and documentation mechanism, grievance redress mechanism, and capacity building.

B. Brief Description of the Project

5. The implementation of the Project contributes to ensuring efficient and safe internal and regional connectivity, sustainable economic growth of domestic trade, will ensure the passage of

constantly growing volumes of transportation by road, reduce the time of delivery of goods and passengers, as well as improve road safety and improve the environmental situation in the region.

6. The project will scale up the efforts of the Islamic Development Bank (IsDB) and OPEC Fund in developing this critical transport corridor, and contribute to Uzbekistan's economic growth through improved transport connectivity¹.



Drawing 1. Project location

C. Objectives of the Assignment

7. The primary objectives of the consulting services are:
 - a. Fulfill the function of the 'Engineer' in administering the civil works contracts (the Contracts) in accordance with the General and Particular Conditions based on International Federation of Consulting Engineers (FIDIC) Conditions of Contract for 'Construction for Building and Engineering Works Designed by the Employer (Second Edition 2017).
 - b. Review the detailed design and ensure that the works have been designed in accordance with the technical specifications and standards;
 - c. Assisting the EA in the preparation of Bidding Documents for the future Contractor and assisting in the evaluation of bids.
 - d. Approve the construction drawings for road construction by the civil works Contractors;

¹ Given the current strategy and situation in road sector for the development of local rural roads, a small component can be added during the implementation of the project, including local roads and feeder roads to improve access between rural areas and the republican highway network. The CR will provide more information on the local rural road component, including a feasibility study and detailed design, if required of the Government.

- e. Ensure that the permanent and temporary works are constructed in accordance with the technical specifications and standards comprising the contract for construction works with the Contractor;
- f. Advise EA on all matters concerning implementation of the Contracts including quality control, work progress, implementation issues, dispute resolution, adjudication or litigation, amendments to the contract, contract termination, certification of payments;
- g. Preparation of ESMP and its enticement;
- h. Ensure compliance with environmental and social safeguards, including the Environmental and Social Management Plan (ESMP), the Biodiversity Action Plan (BAP) and the Biodiversity Management and Monitoring Plan (BMMP), land acquisition and resettlement plans (LARPs) and LARP update or LARP addendum (if any) traffic management plans, health and safety standards and core labor standards;
- i. Ensure compliance with the principles of gender equity aimed at increasing Project benefits and impacts on women in the Project area consistent with Guidance Note on Social, Gender and Sustainable Public Procurement in IsDB financed Procurements (April 2019) are followed during implementation of the Project, including (a) equal pay to men and women for work of equal value; (b) enabling working conditions for women workers; and (c) taking necessary actions to encourage women living in the Project area to participate in the design and implementation of Project activities;
- j. Provide the staff of the EA with on-site training in contract management and other procedures relevant to site supervision and contract administration;
- k. Provide the staff of the EA and the people affected by the project (the population along the project site) with training courses in EHS, Social and Gender questions;
- l. Provision of external training (international experience, no more than 10 employees of Employer) for the development of the potential of the personnel of the transport sector for the maintenance of cement-concrete roads, the development of toll roads²;
- m. Any other functions laid upon the Engineer under or to be implied from the Contracts;
- n. Road Safety Audit;
- o. Development Reports as requested.

D. Scope of Services, Tasks (Components) and Expected Deliverables

8. The EA intends to award three civil works contracts under this project, one each for Lot 1, Lot 2 and Lot 3 for which the procurement will be carried out in parallel through the International Competitive Bidding (ICB) Open with pre-qualification and contracts are planned to be awarded at the same time.

9. The consultant shall administer and supervise the civil works contracts. In doing so, care should be taken to minimize climatic impacts and to implement greenhouse gas reduction measures.

10. The Consultant will be responsible for assistance in preparation of Bidding Documents for the Civil Works, and also provide its assistance for preparation of contract for the Supply of Weigh In Motion (WIM) system and conduct the supervision of installation process. Especially:

² The Engineer, within the established budget, will provide training for specialists in the Road Sector (i.e. CR as EA, local road maintenance departments, Design Institutes), in order to ensure operational safety and plan future service and maintenance of highways, including toll roads based on the experience of road companies in developed countries (Germany, Japan, etc.). During the training, access to current international projects should be provided as indicative training materials. All expenses related to training (visa support, accommodation, flights, meals, etc.) will be covered by the consultant.

- a. Ensure that the detailed specifications and installation of the WIM by the contractor are in conformity with the defined specifications and/or meet the required performance criteria as appropriate;
- b. Conduct required quality assurance tests on works done and equipment purchased and installed;
- c. Certify that works are done, and equipment purchased and installed, are in compliance with the contract before initiating testing and trial running;
- d. Perform any and all other items of the works not specifically mentioned above but which are necessary and essential to successfully supervise and control the construction activities in accordance with the plans, specifications and terms of contract;

11. The Consultant will have all functions and responsibilities vested on the “Engineer” in the General and Particular conditions of contract.

12. **Design Review and Approval:** During the initial pre-construction period, the Consultant shall carry out a review of the detailed design made available by the EA and by the results of the review provide periodic status reports to the EA and IsDB-OPEC on the design review, identify any problems and difficulties encountered and the proposed solutions. Prior to the start of construction, the Consultant shall also review and approve construction drawings prepared by the Contractor. The scope of works shall include, but not be limited to, the following:

- a. Establish the schedule, methods, and procedures for reviewing the detailed design made available by the EA and of construction drawings prepared by the Contractor.
- b. Review the detailed design and construction drawings in accordance with the design standards/technical specifications and the actual site requirements. The review of the detailed design shall be completed no later than 45 days of the commencement of this stage and by the results of the review provide periodic status reports to the EA and IsDB-OPEC on the design review, identify any problems and difficulties encountered and the proposed solutions. Review of construction drawings will be completed no later than seven days from the date of submission to facilitate the commencement of works;
- c. Ensuring that the technical specifications have been duly accounted for in the detailed engineering design and construction drawings; and
- d. Provide periodic status reports to the EA and IsDB-OPEC on the design review, identify any problems and difficulties encountered and the proposed solutions.

E. Contract Administration and Construction Supervision:

General

- a. The civil works will be executed under the General and Particular Conditions of Contract. Accordingly, EA will be the “Employer” and the consultant will function as the “Engineer” subject to certain requirements for the Engineer to seek the approval of the Employer prior to taking action under specified clauses of the Contract.
- b. The consultant will administer the civil works contract and supervise the day-to-day civil works on site following construction supervision procedures based on sound international practices to: (i) ensure that the Project is constructed in accordance with the provision of the civil works contracts; (ii) monitor the completion of the Project within the agreed program and budget and to the quality standards and safeguard provisions stipulated in the Contracts; (iii) monitor compliance with the safeguard requirements and ensure that adequate mitigation measures have been taken during the implementation of the Project; (iv) maintain communication with local communities and help identify and resolve emerging issues and complaints; and (v) advise the EA on matters concerning implementation of the Project.

- c. The Consultant will report to the EA and IsDB-OPEC on matters concerning implementation of the project. The Consultant shall also participate in IsDB-OPEC Fund's review Missions at site and with the EA and take necessary steps to resolve any issues arising.
- d. The Consultant will generate a monthly Progress Report and relevant safeguards monitoring reports on the basis of the Contract Management Plan template shown in the Annex No.1 hereto.
- e. The Consultant will be required to nominate an Engineer's Representative who will be full-time resident in the project area.
- f. The Consultant shall operate a quality system that governs their own activities. The Quality Plan shall comply with the latest practices published by the International Standards Organization (ISO). Within one month of the commencement of the services, the Consultant shall submit a draft Quality Plan covering their various duties to be undertaken during the all stages: procurement CW, design review, supervision of the civil works contracts and subsequent DLP. The consultant shall amend the draft Quality Plan to such extent as is mutually agreed with the EA. The consultant shall work throughout the duration of the contract to the procedures and requirements of the Quality Plan.

Construction Supervision

- g. The consultant, as the Engineer, shall be responsible for carrying out all the tasks described as being under the purview of the Engineer in the General and Particular Conditions of Contracts. The responsibilities of the Engineer shall include, but not be limited to, the following tasks:
 - Ensure that the Notice of Commencement Date is issued to the Contractors with clearly specified date and strictly in accordance with (works) contract procedures;
 - Monitor land acquisition and resettlement activities as per LARP project reports undertaken by the Employer and provide the required support, as and when required;
 - Prepare ESMP, LARP implementation completion report, social safeguards semiannual report, update the resettlement plan if needed,
 - Prepare corrective action plan, conduct safeguards due diligence if needed.
 - Support the EA in establishing the grievance redress mechanism for the project and its dissemination to the affected communities and households. The consultant shall also support in the resolution of grievances and reporting on the status of complaint resolution,
 - Liaise with the appropriate authorities to ensure that all the affected utility services are timely relocated to avoid any disruption to the works;
 - Ensure that the project site/right of way, free from all encumbrances, is handed over to the Contractors in accordance with the agreed schedule or otherwise advise the Contractors of possible delays in handing over of the project sites;
 - Ensure that the Contractors have submitted all the required bank guarantees (performance securities, advance payment guarantees and guarantees for release of retention money, if any) and insurance policies required in accordance with the Contracts;
 - Examine the Contractors' work programs (or the revised work programs) and issue relevant comments to the contractors. Ensure that the Contractors carry out the works in accordance therewith. Wherever required, facilitate the reaching of agreement between the Employer and the Contractors regarding the work programs and ensure that the construction works are carried out in accordance with the agreed work programs. The Engineer will keep the Employer informed of any delay or potential

delays in the work schedules of the Contracts, and will take all necessary actions to prevent potential delays;

- Ensure all construction equipment is mobilized by the Contractors in accordance with the work programs/Contracts and inspect the Contractors' equipment;
- After the commencement date and prior to the commencement of works, carry out with the contractors a joint survey of the terrain through which the road will be constructed and transfer the data collection to a CAD system and becomes the base map (digital terrain model);
- Approve and/or issue working drawings/issue for construction (IFC) drawings and issue instructions to the Contractors as required in accordance with the Contract specification and the Contractors' quality management plan;
- If necessary, issue clarifications and supplementary drawings to the Contractors and/or approve alternate drawings, provide the Contractors with all necessary surveys and reference data to facilitate the work and to avoid any potential delays in implementation of the works;
- Inspect and approve all material sources identified by the Contractors;
- Inspect the results of material and soil tests to ensure compliance with specifications and issue immediate notice to the Contractors in the event that such materials and works fail to comply with the specifications;
- Maintain records of all testing work, including cross-referencing of items of work to which each test refers and location from which any samples were obtained for testing;
- Supervise the Contractors in all matters concerning safety of workers and the public, and the care of civil works including provision of necessary personal protective equipment, lights, guardrails, fencing and security. The consultant shall establish written procedures for monitoring and reporting on health and safety;
- Regularly monitor and inspect the Contractors' quality control and assurance programs to ensure that quality of the finished works meet the Contracts standards and specifications. This includes regular checking of the materials testing programs;
- Carry out regular audits of the Contractors' and subcontractors' quality systems to ascertain that the requirements of the systems and the EA's quality objectives are being met. The quality audits shall be done at least once every six months. The consultant shall report all non-conformities to the EA after each audit and explain what actions shall be taken by the contractors to rectify each non-conformity.
- Assess and check the laboratory and field tests carried out by the contractors, and carry out independent tests;
- Prepare the non-conformity reports and propose rectification work or solution;
- Monitor progress of the construction works through computer-aided project management techniques;
- Convene regular site meetings with the Contractors to discuss issues and problems affecting the progress, and brief the Employer;
- Coordinate with the relevant local government authorities/agencies so as to minimize disruption to the works programs;
- Review and comment on the monthly progress reports submitted by the Contractors detailing the work undertaken during the previous month, the progress of the work against the approved schedules, the problems and difficulties encountered by the Contractors and other issues requested by the Employer;
- Assist the EA in processing the Contractors' applications for subcontracting parts of the works, and removing ambiguities in the contract documents, if any.

- Measure the completed works and keep detailed records, including measurement books;
- Maintain permanent record which shall include, but not be limited to, sites correspondences, survey data, work programs, material testing results, quality acceptance data, daily site diaries, records of plant, labour and materials used, measurement and certification, minutes of meetings, and records of all the data/reports/certificates/statements, etc., under the Contracts.
- These permanent records shall be handed over to the EA after the expiry of the consultancy contract;
- Ensure that the contractors, in accordance with the (works) contracts, prepare quarterly cash flow projections for the Employer in an acceptable format, in which cash flow should identify budget estimates for all outstanding works;
- Measure the work and certify the interim and final payment certificates for submission to the Employer;
- In accordance with the (works) contract, review all claims submitted by the Contractors, monitor the contractors' contemporary records in relation therewith and make determination on the Contractors' claims for extension of time for completion, additional payment or otherwise;
- Responsible for advising and assisting in respect to contractual dispute, in the purview of either the dispute board or arbitration between Employer and Contractor, whenever required;
- Issue taking over certificates in respect of satisfactory completion of the works in accordance with the contract provisions;
- On the completion of the works, verify the Contractors' "as-built drawings" as a true record of the works as constructed and ensure that the works have been executed in accordance with all the provisions contained in the Contracts including those relating to the standards of workmanship, safety requirements, and compliance with safeguard requirements;
- Undertake environmental monitoring including all of the requirements of the project Initial Environmental Examination (IEE) to ensure that the construction methods proposed by the Contractors for carrying out the works are satisfactory, with particular references to the technical requirements of sound environmental standards on the basis of the IsDB's Environmental and Social Safeguards Policy (ESSP, Feb 2020);
- Supervising and guiding the contractors to prepare Site-Specific Environmental and Social Management Plan (SSESMP) in accordance with ESMP including the Health and Safety Management Plan (with particular regard to the assessment and management of risks associated with the Covid 19 pandemic). This task should be completed before the start of the construction;
- Carrying out E&S supervision to ensure successful implementation and monitoring of SSESMP;
- Supporting the EA to get all national permits regarding environmental, social, health, and safety (ESHS) prior to the construction;
- Ensuring the compliance with national regulations in terms of environmental protection, occupational health and safety, and labor issues;
- Implementing the monitoring plan defined in the ESMP and conducting regular monitoring of the compliance related to ESHS and labor issues;
- Monitoring and assessing environmental and social performance and efficiency of mitigation measures, as well as identifying non-compliance issues or adverse trends in a result, and put in the place corrective measures;

- Liaison with the communities, and Makhalla heads in the project area, other stakeholders on environmental and social issues related to the project; and keeping the local communities informed of the environmental and social compliance of the project and properly address their concerns if any;
- Leading GRM at the field level as suggested in the GRM section of the ESMP;
- Providing ESHS inputs to the Quarterly Project Progress Reports; documenting the E&S supervision and regularly reporting to the PIU regarding ESMP implementation including GRM.
- Ensure that the construction works are undertaken based on the ESMP and the BMMP to mitigate the environmental issues as detailed in the IEE. Ensure that BAP is implemented;
- Assist the EA to prepare environmental monitoring reports (semi-annually during construction and annually during operation) for submission to the EA and IsDB-OPEC and for disclosure. The status of the implementation of the ESMP, the BAP and the BMMP shall be covered in the reports;
- Prepare semi-annual internal social monitoring reports throughout the project implementation period on the land acquisition and resettlement activities (including the livelihood restoration activities and monitor job placement of members of severely affected and vulnerable households) in accordance with the Land Acquisition and Resettlement Plan (LARP) prepared by the EA in line with IsDB ESSP (2020 or further edition);
- Monitor compliance of contractors and subcontractors to core labor standards (i.e. ensuring freedom of association and effective recognition of the right to collective bargaining, elimination of all forms of forced or compulsory labor, effective abolition of child labor, and elimination of discrimination in respect to employment and occupation). Report on compliance to core labor standards will be included in the semi-annual social monitoring reports.
- Ensure minimum disruption to the local settlements while approving Contractors' work programs, including monitoring of the impacts of construction work on local settlements, and by reporting impact monitoring to the Employer;
- Ensure opportunities for skilled female labor are facilitated and made available;
- Monitor the implementation of the health and safety programs at camp sites (focusing on construction workers) and local communities in the project area including the information and education campaign in the form of awareness raising seminars and meetings in collaboration with Ministry of Health, Women's Committee of Uzbekistan (regional branches) on sexually-transmitted diseases and HIV/AIDS (human immunodeficiency virus/acquired immunodeficiency syndrome) with disseminating relevant gender-sensitive publications and distribution materials as required under the civil works contracts; and
- Provide on-the-job training for the EA's staff at sites on construction supervision, contract administration, quality control and assurance, safeguards, PPMS and monitoring and evaluation and other activities.
- Carry out technical audit once every month. Regular check calibration of survey and lab equipment, contractor's plant and review of QA/QC plans.
- Carry out Road Safety Audit at the beginning and at the end of the project as per IsDB-OPEC, International and local manual guidelines.

Project Performance Monitoring/Benefit Monitoring and Evaluation

- h. The consultant shall establish a system for project performance monitoring in accordance with the project framework. In doing so, the consultant will:

- Identify, on the basis of the project, performance indicators and the targets to be monitored during the implementation of the project and shall establish systems for collecting data and statistics for such monitoring;
- Carry out a baseline survey on performance indicators and establish a set of baseline data based on which the project impacts will be reassessed;
- Collect required data and undertake other relevant surveys before start of construction, after the 1st and 2nd year from the commencement date, and immediately after completion of the Project;
- Assess the socioeconomic impacts and environmental sustainability of the Project;
- Incorporate findings and supporting data in the project completion report; and
- Conduct training in operational social research methods and build the capacity of the EA.

Reporting

- i. The consultant will prepare and update monthly progress report on the basis the Contract Management Plan (CMP) template shown in Annex No,1 hereto. The CMP is a set of tables, schedules, graphs and photographs, regularly updated with data from the site, designed to provide all meaningful information on how a contract is progressing, from the technical, financial or other perspectives (e.g. safeguard management). The CMP and the progress reports are intended to be a tool enabling the EA to take mitigation or corrective measures as may be required if any variance is detected so that the contract can be maintained (or put back) on track.

The Consultant may propose some amendment or improvement to the Contract Management Plan template if he/she deems fit, in which case, he/she will submit the proposed amendment or improvement to the EA for approval.

A primary source of information of the CMP should be the contractors' progress report. Another source of information is the monitoring reports prepared by the safeguard specialists the Consultants team. These reports will cover the monitoring of the EMP, the BAP, and the BMMP implementation, social safeguards and compliance with core labor standards. The Consultant may also have to collect information from the EA with respect to obligations which are incumbent upon the "client" or "employer", such as securing certain permits, processing the land acquisition and resettlement plan, moving some utilities, etc.

F. Actions Requiring Specific Approval of the Employer:

15. The Consultant will be required to obtain prior approval of the Employer in the following matters:

- Approving subletting of any part of the works;
- Certifying additional cost;
- Determining an extension of time;
- Issuing a variation having any financial implications in any manner; and
- Fixing rates or prices for any item.

G. Duration of the Assignment

16. The services will be provided for: 12 calendar months for preparation stage (Design Review / Road Safety Audit and Procurement assistance for CR/PIU), 36 calendar months for Construction Supervision and Administration of civil works contracts and 24 calendar months (with a reduced number of personnel) during the Defects Liability Period (DLP) under construction contracts. The consulting services contract is expected to start in August 2023.

H. Team Composition and Qualification Requirements for Key Experts

17. It is estimated that 199 person months of key international experts and 371 person months of key national experts and 100 person months of non-key experts would be required by the EA to accomplish the tasks. The requirement of various experts and the duration of their engagement are indicated below. However, the consultants may propose additional staff, within the budget, that may be required to accomplish the tasks.

No.	Specialists	Input (months)
A.	International experts	
1.	Team Leader/Project Manager/Highway Engineer	48
2.	Resident Engineer /Road Engineer	48
3.	Material Engineer	30
4.	Contract Specialist	15
5.	Environment Specialist	14
6.	Social /Resettlement /Gender / Core Labor Standards / Benefit Monitoring Specialist	14
7.	Road Pavement and Quality Assurance Engineer /Cement Concrete Pavement Specialist	12
8.	Road Safety Specialist/Road Design Engineer	12
9.	WIM Engineer	6
	Subtotal (A)	199
B	National experts	
11.	Deputy Team Leader/Resident Highway Engineer (3)	118
12.	Material Engineer (3)	90
13.	Environment Specialist	16
14.	Social Monitoring /Resettlement /CLS/Benefit Monitoring Specialist	16
15.	Quantity Surveyor (3)	90
16.	Road Safety Specialist	12
17.	Contract /Legal Matters Specialist	16
18.	Occupational Health and Safety Specialist	8
19.	Site Inspector on WIM system	5
	Subtotal (B)	371
	Total international and national key experts	570
C.	Non-key Specialists	
21.	Construction Site Inspector (3)	60
22.	Land Surveyor (3)	24
23.	Draftsman (AutoCAD)	16
	Subtotal (C)	100
	TOTAL (A+B+C)	670

18. The personnel specified above shall be supplemented by the consultant with an appropriate number of translators and support staff as necessary to properly perform the services and the expenses shall be mentioned in out-of-pocket expenses. These personnel including the non-key professionals shall be appointed by the Consultant and informed to the Client, but they will not be subject to approval by the Client.

I. Tasks and Qualification Requirements

A. International Consultants:

Team Leader/Project Manager/Sr. Highway Engineer: The Team Leader/ Sr. Highway Engineer will be responsible for overall project management in performing scope of work indicated in the Terms of Reference for the Consulting Services, namely for the overall successful completion of the design review and supervision tasks. The Team Leader/ Sr. Highway Engineer shall act on behalf of the Employer following the FIDIC conditions of Contract, Red Book SE 2017. The specific focus of the Team Leader/ Sr. Highway Engineer will be early identification of issues and proposing mitigation or preventive measures in all aspects of the scope of work. The Team Leader/ Sr. Highway Engineer shall be responsible for giving solutions to the technical issues during the design review stage, as well as addressing issues potentially leading to claims and increase of costs in the civil works

contract in the supervision stage, by effective management of both the design review and construction supervision components. Special attention will be given to claim/ dispute resolution activities as well as prevention of delays during the construction supervision stage. The Team Leader/ Sr. Highway Engineer will be responsible for preparation of variation orders and their submission for the approval to EA and no objection by IsDB-OPEC. The Team Leader/ Sr. Highway Engineer will also have responsibility to prevent potentially expected or actual claims. The Team Leader/ Sr. Highway Engineer shall prepare Monthly Progress Reports, and all required reports and all type of documents indicated in the Terms of Reference for the Consulting Services. During the construction supervision stage, the Team Leader/ Sr. Highway Engineer will lead official meetings with the Contractors, such as monthly progress meetings with the Contractors, as well as shall be present during the official tests, such as the concrete paving official tests and other.

Qualification: Degree in civil engineering preferably with post graduate qualification in highway engineering. Preferably not less than fifteen (15) years similar experience in design and construction supervision of highway projects of which five (5) years of experience in design and construction supervision of rigid pavements, with FIDIC General Conditions of Contract, including 8 years' international experience. Working knowledge in Russian Language and experience in CIS countries is preferred.

Resident Engineer/Road Engineer: The Resident Engineer/Road Engineer will be responsible for overall project management in all technical aspects by performing scope of work indicated in the Terms of Reference for the Consulting Services. The Resident Engineer/ Road Engineer will be responsible for the completion of tasks in design review stage as well as supervision stage in the framework of the FIDIC Conditions of Contract on behalf of the Engineer. In preparation stage he/she shall make assistance to Employer in Preparation of Bidding Documents (i.g. correction and making necessary changes/corrections to Specifications, Bill of Quantities (BOQ) and requirements of the Employer to the Equipment and Personnel of the contractor), Evaluation process for determination of the Contractor. In the supervision stage the Resident Engineer/ Road Engineer shall supervise all the construction activities, be aware of daily progress of the construction as well as existing issues and suggest immediate solutions in consultation with the Team Leader. The specific focus of the Resident Engineer/ Road Engineer will be early identification of technical issues and proposing mitigation or preventive measures in all technical aspects of the scope of work related to various project activities. The Resident Engineer/ Road Engineer will be responsible for early identification of technical issues potentially leading to claims and increase of costs (especially in civil works contracts) by means of proper management of the construction supervision component and personal review of contracts' progress. Special attention will be given to claim/ dispute resolution activities related to price escalation, as well as prevention of delays, possibly caused by right of way issues (if any), deficiencies in designs (if any), construction specifications and others. The Resident Engineer/ Road Engineer will be responsible for preparation of variation orders and their submission for the approval to EA. The Resident Engineer/ Road Engineer will also have advisory role on potentially expected or actual claims. The Resident Engineer/ Road Engineer will assist the Team Leader to prepare monthly, and all required reports and all type of documents indicated in the Terms of Reference for the Consulting Services. During the construction supervision stage, the Resident Engineer shall be present and assist the Team Leader in leading official meetings, such as monthly meetings with the Contractor, concrete paver official tests and other. The Resident Engineer/ Road Engineer shall be responsible for the all-technical issues of whole scope indicated in this Terms of Reference for the Consulting Services.

Qualification: Degree in civil engineering. Preferably ten (10) years' similar experience in design and construction supervision of highway projects of which not less than three (3) years in construction with rigid pavements, with FIDIC General Conditions of Contract, including 6 years' international experience. Working knowledge in Russian Language and experience in CIS countries is preferred.

Materials Engineer: Materials Engineer will be responsible for performing scope of work indicated in the Terms of Reference for the Consulting Services. In the construction supervision stage the specialist will be responsible for supervising the setting up, organization and layout of the Contractors' field laboratories; monitoring the mobilization of the testing equipment to ensure that the laboratories are adequately equipped and capable of performing all the specified testing requirements of the Contract; and supervising the setting-up of the Contractor's rock crushers and concrete and asphalt mixing plants to ensure that the specified requirements for such equipment are fully met. The specialist shall review the crushing and concrete plant construction and operation.

Qualification: Degree in civil geotechnical or material engineering. Preferable ten (10) years' similar experience of establishing and managing quality assurance for the supervision of construction materials, laboratory and field testing of rigid pavement materials as per ASTM, AASHTO standards including 5 years' international experience. Working knowledge in Russian Language and experience in CIS countries is preferred.

Contract Specialist: At the initial stage (Procurement Support to the EA), will provide support in the preparation of Bidding Documents and evaluation of Contractors' proposals for construction work. Throughout the contract implementation, the Contract Specialist will (i) assist to employer in evaluation process for determining Contractors for Works, (ii) evaluate variations and be responsible for their proper format (iii) assist in assessing the contractor and employer's claims in accordance with the Contract; (iv) assess contract amendments to the particular conditions or other documents forming part of contract (if any is needed); (v) monitor fulfillment of contractual obligations by the Contractor and recommend proper and timely notices to be issued or other actions in accordance with the Contract; and (vi) Assist Team Leader in making determinations from contractual point of view.

Qualification: Degree in civil engineering, law or relevant discipline with 12 years' similar experience in the Procurement and Implementation of highway projects using FIDIC conditions of contract involving contract management including variations under the contract, settlement of claims and disputes, etc., including 5 years' international experience.

Environmental Specialist: The international environmental specialist of the Consultant, with the support of the national environmental specialist, will be responsible for supervising the contractor's environmental performance, coordinating the public consultations and project GRM, and assisting EA/IA to prepare periodic environmental monitoring reports (EMRs).

During the pre-construction stage, s/he will prepare a detailed action plan including environmental monitoring checklists to be completed by the National Environmental specialist to ensure that the Environmental Management System is established, implemented, maintained and will monitor its performance. S/he will also take care of all environmental issues during construction works.

S/he will also conduct environmental training and briefings to provide environmental awareness on IsDB and the government environmental safeguards policies, requirements and standard operating procedures in conformity with the government's regulations and international practice for project; ensure baseline and periodic monitoring and reporting of Contractor's compliance with contractual environmental mitigation measures during the construction stage. S/he will also help with the development of the Contractor's SSE SMP.

Detailed tasks:

- (i) Assist the EA and the Consultant's Team leader in managing and implementing the project and ensuring compliance with the project implementation plan, the loan agreement, and the project agreement(s), particularly with IsDB ESSP 2020 requirements, and the IEE, the ESMP, the BAP and the BMMP of the project;
- (ii) Review the IEE including the ESMP, the BAP and the BMMP to understand the project's environmental safeguards requirement, and assist the EA in updating the IEEs in case of unanticipated impacts;

- (iii) Conduct trainings, workshops, and other knowledge sharing sessions on lessons and good practices on safeguards, health and safety, etc. to the EA's staff (including PIU-Environmental Specialist) and contractor's staff (especially the contractor's environmental officer, the contractor's health and safety officer), and build capacity of relevant staff to undertake their tasks in EMP implementation and monitoring. One of the trainings should be conducted prior to the start of construction to develop the knowledge and understanding of the environmental, health and safety aspects of the project;
- (iv) Ensure that all the environmental mitigation measures required to be implemented are incorporated into the contract documents;
- (v) Assist the EA in reviewing the SSEMPs prepared by contractor(s) and provide clearance;
- (vi) Ensure that the contractors (and its subcontractors, if any) comply with the relevant measures and requirements set forth in the IEE, the EMP and the BMMP, and any corrective or preventative actions set out in periodic EMRs;
- (vii) Assist the EA in supervising and monitoring the ESMP / BAP / BMMP / SSEMPs implementation and in preparation of periodic EMRs for further submission to IsDB-OPEC; and
- (viii) Support the EA in resolving project-related complaints/grievances;
- (ix) Assist the EA in organizing and conducting consultations and awareness-raising activities;
- (x) Contribute inputs to the Consultant's monthly compliance reports, highlighting potential and actual issues and/or problems related to the ESMP / BAP / BMMP / SSEMPs and recommending corrective measures for EA's actions;
- (xi) Upon completion of the civil works, prepare a report on the project's environmental compliance performance; including lessons learned that may help the EA in their environmental monitoring of future projects. This report will be part of the input to the overall Project Completion Report.

Qualification: Master's degrees in environmental science or equivalent, preferably 12 years of continuous experience working in the field of environmental management, for internationally funded infrastructure development projects. The specialist should be familiar with IsDB ESSP 2020 as well as having experience in IsDB-financed infrastructure development projects including road projects, as an environmental specialist. The specialist should be guided by the government's procedures on environmental management, IsDB ESSP 2020, the IEE and the ESMP / BAP / BMMP / SSEMPs. Training skills would also be an advantage. Working knowledge in Russian Language and experience in Commonwealth of Independent States (CIS) countries is preferred.

Time Period: The expert should be engaged on a part-time basis for a period of fourteen (14) months spread over the duration of the construction and DLP periods (60 months). The specific on-site inputs will be determined by the Consultant and the EA.

Social / Resettlement/Gender / Core Labor Standards / Benefit Monitoring Specialist:

The international social specialist of the Consultant, with the support of the national social specialist, will be responsible for supporting the EA in reviewing and updating (if needed) the land acquisition and resettlement plan (LARP) based on the design review and any design changes that may occur during the project implementation. The specialist will support the implementation and monitoring of the LARP and livelihood restoration activities.

During the implementation of the civil works, the specialist will help identify any unanticipated LAR impacts and non-compliances and prepare the necessary LARP update or corrective action plan (CAP). The specialist will ensure the timely and quality preparation of LARP implementation completion reports, and semi-annual social monitoring reports (SSMRs). The specialist will also support the EA in monitoring compliance of contractors and subcontractors with core labor standards and benefit monitoring.

The specialist will help the EA to establish and maintain a grievance redress mechanism to help address concerns related to land acquisition and resettlement. He/she will assess the capacity of the EA on social safeguards, core labor standards and gender concerns and

design/implement a training program and develop systems/procedures to improve management of land acquisition and resettlement in road projects.

With support from the national specialist, design and conduct selective household surveys and participatory research to monitor socioeconomic and gender impacts on beneficiaries during the construction supervision. Ensure implementation of gender provisions as outlined in section IIIB of the SPRSS. Campaign HIV and human trafficking awareness. Implementation of resettlement plans, conducting socio-economic surveys and benefit monitoring involved in implementation of the project.

Qualification: Degree or diploma in sociology or social sciences or equivalent. Preferably ten (10) years' experiences in development and/or implementation of resettlement plans, conducting socio-economic surveys (including gender) and benefit monitoring involved in implementation of projects including highway projects funded by developing partners, including 5 years' international experience. Familiarity with IsDB-related policies and guidelines (i.e. IsDB ESSP 2020), Gender and Development, Social Protection and Core Labor Standards) is required. Working knowledge in Russian Language and experience in CIS countries is preferred.

Time Period: The expert should be engaged on a part-time basis for a period of fourteen (14) months spread over the duration of the construction and DLP periods (60 months). The specific on-site inputs will be determined by the Consultant and the EA.

Road Pavement and Quality Assurance Engineer /Cement Concrete Pavement Specialist: The specialist shall prepare the Quality Assurance plan and participate in preparation of the supervision manual. During the supervision stage the specialist shall supervise the testing and evaluation of highway construction materials used in modern highway construction techniques. Review of the mix designs for the cement and asphalt concrete pavement submitted by the Contractor. Monitor and inspect the Contractor's quality control and assurance program to ensure that quality of the finished works meet the Contract standards and specifications. This includes regular checking of the materials testing program. Carry out regular audits of the Contractor's and subcontractors' quality systems to ascertain that the requirements of the systems and the EA's quality objectives are being met. Assess and check the laboratory and field tests carried out by the contractor, and carry out independent tests.

Qualification: Degree in civil engineering and experience in QA/QC functions in road construction. Should possess professional licensing (charted/certified) and the right to practice the profession. Preferably twelve (12) years' similar experience in all phases of pavement mix design, quality assurance process and supervision of construction works. Working knowledge in Russian Language and experience in CIS countries is preferred.

Road Safety Specialist/Road Design Engineer: The Road Safety Specialist/Road Design Engineer will review designs, specifications, construction method, etc. from road safety perspective. Review traffic control plans prepared by the Contractor during construction. Verify design of temporary diversions and traffic management arrangements. Regularly inspect road safety audit work zones under traffic. Conduct a post-construction road safety audit, identify road safety issues and provide recommendations to address them. Raise the EA's capacity and awareness of the international standards of road safety.

Qualification: Degree in civil engineering or transport highway engineering, and preferably post graduate specialization in road safety. Should possess professional licensing or certificate as a road safety auditor. Preferably fifteen (15) years' experiences in road and highways and 5 years' relevant experience in road safety audits completing all road audits for preferably 2 road projects. Working knowledge in Russian Language and experience in CIS countries is preferred.

WIM Engineer: She/he will be responsible for the detailed procurement process, design review & supervision of the WIM systems. She/he will assist the Team Leader on the coordination of civil building design and weigh facility design. The person should also be

familiar with the Weigh in Motion concept design for Dynamic Speed overloading control system principals and the inter relation of data sharing at facility including the appropriate alert system designed for local authority in responding to traffic violation.

Qualification: Master/Degree in Civil, Electrical / Electronic or Mechanical Engineering and / or Transportation. Preferably 5 years working experience in detailed design, urban transport engineering and construction of Weigh in Motion system.

B. National Consultants:

Deputy Resident Engineer/Highway Engineer: He/she will assist the Team Leader on coordination and supervision of the road construction works in the field including coordination and liaison with Employer and will assist the Team Leader in day-to-day construction supervision, monitoring schedule, preparing monthly certificates, reviewing and approving shop drawings and as-built-drawings.

Qualification: Degree in civil engineering. Preferably ten (10) years' similar experience in design and construction supervision of highway projects.

Materials Engineer: Under the guidance of the international material engineer, he/she will undertake day-to-day supervision of compliance to material specifications and testing, supervise the contractors work, and certify the construction in accordance with contract conditions including acceptance standards of materials, approval of source supply, and material testing methods.

Qualification: Degree in civil engineering. Preferably five (5) years' similar experience in supervision of construction works, and laboratory and field testing for rigid pavement materials as per ASTM, AASHTO and BS standards as part of a quality assurance process;

Environment Specialist: The expert will support the International Environmental Specialist in conducting his/her tasks. S/he will also undertake periodic audit and monitor the contractor's activities. S/he will (i) review all documents and reports regarding the integration of environmental including contractor's environmental action plan, (ii) supervise the contractors' compliance to EMP, and (iii) prepare monthly compliance reports (iv) monitoring of BAP implementation.

Qualification: Degree in environmental sciences or equivalent. Preferably five (5) years' experiences in conducting environmental impact assessments and implementation of environment mitigation plans and/or monitoring implementation of environmental mitigation measures during implementation of projects including road projects funded by developing partners.

Time Period: The expert should be engaged for 16 person-months on an intermittent basis during construction and DLP periods.

Social Monitoring/Resettlement/Gender/Core Labor Standards/Benefit Monitoring Specialist: The national specialist will provide all the required professional and logistic support to the team leader/and the international social development, resettlement and benefit monitoring specialist and take the lead in the conduct of field activities and outreach to affected persons. The national specialist will conduct regular visits to project sites, conduct consultations with affected households and coordinate with relevant agencies, Khohimiyats and GRCs on LAR-related issues and activities including livelihood restoration measures. He/she will maintain a database of APs and track their conditions prior and after their displacement, prepare field reports and contribute to the preparation of LARP implementation report, LARP update (if needed) and semi-annual social monitoring reports and benefit monitoring report.

Qualification: Degree in sociology or social sciences or equivalent. Preferably five (5) years' experiences in development and/or implementation of resettlement plans, conducting socio-economic surveys and benefit monitoring involved in implementation of projects including highway projects funded by development partners.

Time Period: The expert should be engaged for 16 person-months on an intermittent basis during construction and DLP periods.

Quantity Surveyor: He will assist the Highway Engineer in daily supervision, check the quantity, variations, justification and verify the monthly certificates.

Qualification: Degree in civil engineering. Preferably five (5) years' experiences as a quantity surveyor in construction of highway projects executed under FIDIC conditions of contract.

Road Safety Specialist: Assist the International Road Safety Auditor in review of traffic control plans prepared by the Contractor during construction, verify design of temporary diversions and traffic management arrangements. Regularly inspect road for compliance with the road safety. Assist the International Road Safety Auditor in conducting a post-construction road safety audit, identify road safety issues and provide recommendations to address them. Raise the EA's capacity and awareness of the international standards of road safety.

Qualifications: Degree in civil engineering or transport highway engineering, preferably ten (10) years' experiences in road and highways and not less than 3 years' relevant experience in road safety activities.

Contract/ Legal Matters specialist: Assist the International Contracts Specialist in monitoring all contractual obligations, assist the team leader and contracts specialist in understanding and interpreting the local legal aspects and country legislation.

Qualification: Degree in Civil engineering, law or relevant discipline with not less than 5 years' similar experience in the implementation of highway projects using FIDIC conditions of contract.

Occupational Health and Safety Specialist: The responsibilities of expert should include but not be limited to the following: (i) Development and implementation of local instructions and rules for labor protection and safety at the construction site; (ii) strictly monitor the implementation of the developed instructions on labor protection and safety at the construction site; (iii) preparation of presentations and seminars on labor protection for the personnel of the Engineer and the Contractor; (iv) organization of medical examinations of the Contractor and Engineer personnel, as well as control of their timely implementation; (v) investigation of accidents at the construction site (if necessary), take all necessary measures to prevent them, as well as report such cases to the Employer in writing

Qualification: Bachelor Degree in Liberal Arts / Civil Engineering, at least 10 years of general experience. Latest national experience of at least 5 years in construction projects, including road construction projects, at least 3 years in international projects in the CIS countries Knowledge of national laws and regulations on health and safety

Site Inspector on WIM system: She/he will be responsible for the design review & supervision of the WIM systems. She/he will be responsible for the detailed procurement process, design review & supervision of the WIM systems. She/he will assist the Team Leader on the coordination of civil building design and weigh facility design. The person should also be familiar with the Weigh in Motion concept design for Dynamical / High Speed overloading control system principals and the inter relation of data sharing at both facility including the appropriate alert system designed for local authority in responding to traffic violation.

Qualification: Degree in Civil, Electrical/Electronic or Mechanical Engineering and/or Transportation. Preferably 3 years working experience in detailed design, urban transport engineering and construction, including not less than 1 year's experiences with highway development and overloading control system projects. Working knowledge in Russian Language and experience in CIS countries is preferred.

C. Non-Key Professionals

All the non-key professionals shall be well qualified and experienced in their functional area and meet the project requirements.

J. Reporting Requirements and Time Schedule for Deliverables

1. The consultant shall provide the EA with reports in three hard copies in both English and Uzbek. The consultant shall provide the IsDB-OPEC with reports in two hard copies in English. All documents shall also be provided in electronic formats agreed with the EA. As a minimum this will require one electronic copy in an appropriate editable format and a second copy in Portable Document Format (PDF).
2. All correspondence to EA shall be in both English and Russian languages.
3. The consultant will prepare and submit the following reports:
 - i. An inception report to be submitted within 1 month of commencement of services. The inception report shall include the performance indicators to be monitored during and at the end of the project, and the draft Quality Plan.
 - ii. Report on the data-collection system and the sex-disaggregated baseline survey for the Project Performance Monitoring/Benefit Monitoring and Evaluation, to be submitted within 3 months of commencement of services;
 - iii. A weekly one-page report on the progress of works and any issues that require immediate attention of the EA;
 - iv. Monthly reports in line with the CMP template, to be submitted within 7 days of the end of each month, to include progress monitoring, quality assurance/quality control, schedules of contract payments and variation orders, graphical representations of progress against program based on the approved contract schedules, charts of physical progress on major items, status of any delays, contractual claims, summary of environmental and social issues relevant photographs, details of all financial projections and details of impediments to the works and proposals for overcoming them;
 - v. Environmental monitoring reports (semi-annually during construction and annually during operation).
 - vi. A report on the project's environmental compliance performance upon completion of the civil works. The report will include lessons learned that may help the EA in their environmental monitoring of future projects. This report will be part of the input to the overall Project Completion Report.
 - vii. In case of any accident related to occupational and community health and safety, assist the EA to (i) report to IsDB within 72 hours, and (ii) prepare and submit an incident report with action plan within 7 days of the occurrence.
 - viii. LARP update and corrective action plan (if required), LARP implementation completion report, semi-annual social monitoring reports and benefit monitoring report during project implementation;
 - ix. Annual appraisal reports covering all aspects such as progress monitoring, quality assurance/quality control, status of any delays, contractual claims, and details of all financial projections, to be submitted within 14 days of the end of each year;
 - x. Draft project completion report, in IsDB's format, to be submitted to EA for completion and onwards transmission to the IsDB-OPEC, within 3 months of completion of the civil works.
 - xi. ESMP reports.

K. Client's Input and Counterpart Personnel

1. The Project Implementation Unit's staff within the EA will serve as the liaison between EA, consultants and contractors, and shall be responsible for the overall project management.
2. The EA will provide, through the provision under the civil works contracts, fully furnished site offices and accommodation for the staff of the consultant, equipment including laboratory equipment, and vehicles etc. The works contractor is directly responsible for this provision. The EA shall also provide all relevant project reports, documents, etc.

relating to the project and qualified counterpart personnel to work in close coordination with the consultant.

3. **Equipment, Facilities and other things for the consultant:** The consultant will be provided with logistical support consisting of equipment, vehicles and office accommodation to be procured as part of the Works contracts. The works contractor is directly responsible for this provision. The number and location of these facilities will be agreed with the contractors. The support will include:

- a. Site Offices, including buildings, maintenance and insurance, utilities, furniture and air-conditioning, computers, printers, scanners and photocopies;
- b. Vehicles, including site vehicles appropriate to the number of supervision staff, maintenance, taxes and insurance for the vehicles;
- c. Equipment including survey and inspection equipment;
- d. Accommodation local to the Site appropriate to the number of supervision staff including maintenance, insurance and utilities;

Support staff comprising chainmen for surveying work and laboratory assistants.

ANNEX No.1 to the TOR

CONTRACT MANAGEMENT PLAN TEMPLATE