OUTLINE TERMS OF REFERENCE FOR CONSTRUCTION SUPERVISION
ZUGDIDI-JVARI-MESTIA-LASDILI ROAD
SECTIONS KM 74-80; KM 89 (ROAD AND TUNNEL); KM 91-103; KM 121-125

A. Background and Objective

1. General

1. Georgia is located south of the Caucasus mountain range, with Russia to the north, Armenia and Turkey to the south, Azerbaijan to the east, and the Black Sea to the west. It has a population of 4.5 million. Georgia, due to its geographic location, provides the shortest transit link between Central Asia and Europe. Hence, transport plays a pivotal role in supporting the national economy, and development of the transport sector is vital to increasing economy of the region through reduced transport costs.

2. Objectives

2. The objective is to rehabilitate road infrastructure to improve accessibility and guarantee easy access to Mestia region all year round. Four project sections are located on Zugdidi-Jvari-Mestia-Lasdili Road, which is of national importance and connects Zeda Svaneti Region, Mestia and other villages of the Zugdidi Rayon and on the Tbilisi-Senaki-Leselidze corridor. These rehabilitation road works will play important role in socio-economic and tourist infrastructure development for this region. Rehabilitation and reconstruction works are funded by the Asian Development Bank (ADB) and the Government of Georgia as part of the Sustainable Urban Transport Investment Project. Overall management and coordination of implementation and supervision will be executed by the Municipal Development Fund of Georgia (MDF).

3. The present terms of reference (TOR) outline scope of work and requirements for the construction supervision of the rehabilitation works for four sections of Zugdidi-Jvari-Mestia-Lasdili road. The road rehabilitation design and other documentation have been prepared by the Design Institute “Transproekti” for the Road Department of Georgia. The required types of works are determined in accordance with “Road Works Classification”. The main technical road standards used at the design stage are as follows:

- Road category - IV
- Road bed width - 7.0÷8.0 m
- Pavement width - 6.0 m, unless otherwise specified
- Road shoulder width - 0.5÷1.0 m
- Road paving type - solid, cement concrete

3. Description of the projects

a. Road Section 1

The project envisages rehabilitation works for the road km74-km80 section and namely:

(i) Reinstatement of the road bed to its normal state;
(ii) Repair and rehabilitation of the existing man-made structures, installation of the new ones, if required;
(iii) construction of lower layer of pavement with coarse graded porous asphalt concrete hot mix, 6 cm thick, class II.
(iv) construction of surface layer with fine graded dense asphalt-concrete hot mix, 4 cm thick, type B, class II.
(v) Length of the project road section - 7000 m.

b. Road and tunnel Section 2

4. The project envisages complete reconstruction of road section of KM 89, namely, the following main works:
   (i) Installation of the access road to Tunnel 156 M in side hill fill (Moving project axis from the existing road to the mountain slope);
   (ii) Construction of a tunnel with the total length of L=260 m. The designed tunnel envisages two-lane with two-way traffic. The width of pavement is 8.5 m.
   (iii) construction gallery against snow from slide with length 84 m.
   (iv) Total length of the project road is 597 m.
   (v) The minimum accepted radius R= 70m, maximal radius - R= 200m m.
   (vi) The road paving is installed by using reinforced cement concrete, 22 cm thick.

c. Road Section 3

5. The project envisages rehabilitation works for the road km91-km103 section and namely:
   (vi) Reinstatement of the road bed to its normal state;
   (vii) Repair and rehabilitation of the existing man-made structures, installation of the new ones, if required;
   (viii) Installation of the new 22 cm thick reinforced cement concrete road paving, instead of the completely demolished one.
   (ix) Length of the project road section - 12,873 m.

d. Road Section 4

6. The project envisages rehabilitation works for the road km121-km125 section and namely:
   (x) Reinstatement of the road bed to its normal state;
   (xi) Repair and rehabilitation of the existing man-made structures, installation of the new ones, if required;
   (xii) Installation of the new 22 cm thick reinforced cement concrete road paving, instead of the completely demolished one.
   (xiii) Length of the project road section - 5,140 m.
B. Scope of Consulting Services

7. The consultants are required to carry out all works detailed and listed in, but not limited to section E. Terms of Reference. A summary of the tasks is as follows:

   **Task 1. Construction Supervision of the four road sections, including:**
   (i) review the road and tunnel design;
   (ii) reconstruction of pavement, drainage, and shoulders, road safety improvements, and repairs to existing structures on Khaishi- Mestia road (km74-km80; km 89; km91-km103 and km 121–125)
   (iii) commission the works after project completion

   **Task 2. Technical assistance, monitoring and consultations**
   The consultants are required to:
   (i) monitor the project performance, benefits and ensure compliance with all social and environmental requirements; and
   (ii) liaise with government authorities, consultants, NGO's and other stakeholders concerned with the project implementation.

8. The objective of the supervision consultant is to ensure that (i) high quality construction is achieved; (ii) designs are carried out following international engineering standards; (iii) all work associated with the project are carried out in full compliance with the designs and specifications; (iv) environmental requirements, road safety and monitoring are carried out in accordance with the recommendations of studies, plans, and analysis of the project, and in compliance with ADB safeguards policy and applicable law of Georgia.

C. Experience and Qualifications Required of the Firm and Specialists

9. The services of an international engineering firm in association with a national engineering firm (collectively called "the Consultant") will be required as detailed in Section E below. The Consultant should have extensive experience in road design, construction supervision, construction specifications, quality control, contract management and dispute resolution of similar size international contracts. The Consultant's team must comprise specialists that have appropriate experience and education and have experience in Georgia and/or in Caucasus and Central Asian countries.

10. The team leader and at least one other international specialist must have a valid (active) license or membership in a professional organization and recent professional development training related to his or her field. The curriculum vitae of the specialists should contain information of the assignment they have successfully completed in the last 5 years, with complete names and addresses of the clients and the name and contact information of the immediate supervisors, and the number(s) of the license(s) and membership(s) and the name(s) of the issuing organization(s).

D. Selection Method and Criteria

11. The lead proposing firm is expected to form associations or joint ventures with one or more national firms with an established record of technical and project area experience. All firms are required to submit a full technical proposal, which will be evaluated according to the quality- and cost-based selection (QCBS) method described in ADB's Guidelines on the Use of
Consultants (2010 as amended from time to time). A weighting system of 80% for quality and 20% for cost will be applied.

12. The Consultant's team will have 23 person-months of international and 82 person-months of national expertise and administrative staff 36 person-months as set out in Section F below. The Consultant may propose alternative arrangements, which, subject to assessment and approval by MDF and ADB, will provide services of an equivalent or better quality. The consulting services are expected to be started by end March 2011.

E. Terms of Reference

1. Construction Supervision for Project

13. The civil works will be executed under the International Federation of Consulting Engineers (FIDIC) Conditions of Contract for Construction, for Building and Engineering Works designed by the Employer (Multilateral Development Bank Harmonized Edition, March 2006) to be procured under the ADB's International Competitive Bidding procedures. The construction period for the Contract will be 12 months plus 12 month defects liability period.

14. The MDF established by the Government under the Ministry of Regional Development and Infrastructures (MRDI) will act as the Employer on behalf of the Government and as the Implementing Agency who will perform day-to-day administration of the Project. The Engineer will be the Consultant (appointed by MDF, with ADB concurrence, in accordance with the ADB Guidelines on the Use of Consultants).

   a. Design Review

15. The Consultant will review the detailed engineering designs prior to mobilization of civil works, with emphasis on the geotechnical investigations, tunnel and pavement design. The Consultant shall prepare a report where his concurrence with the designs is stated and/or modifications are proposed with drawings quality, and advise on further drawing or instructions to the contractors.

   b. Construction Supervision

16. As the Engineer, the Consultant will administer the construction contract and ensure that the works are constructed in accordance with the provisions of the construction contract. The Consultant will make all engineering decisions required for the successful and timely implementation of the civil works contract and have all of those powers which are defined as being the Engineer.

17. In addition to, or as an expansion of the activities and responsibilities required of the Engineer under the civil works contract, the responsibilities of the Consultant will include the following:

   (i) prepare an interim payment certification (IPC) submission and review schedule in consultation with the contractor, and hold joint monthly meetings with the Employer to review the approved payments and agree on the submissions to ADB;

   (ii) review the geometry, pavement, bridge, and other structural designs, specifications, construction method etc, prepared the employer and revise or update if possible to achieve greater economy, safety, reliability, and/or durability;
(iii) prepare working drawings, and provide written confirmation to the Employer indicating the acceptance of ownership of the drawings;

(iv) approve and monitor the contractor’s construction program and method statements, verifying that they are consistent with the implementation schedule for the Project;

(v) provision of survey data to the contractor and checking the contractor’s setting-out of the works;

(vi) permanent presence on site such as but not limited to inspectors of works, surveyors, material technicians and senior Engineers’ staff and ensure tight cooperation with MDF Works’ Supervisors in solving various problems;

(vii) planning and execution of construction supervision and contract administration, including effective and regular supervision of the works, maintenance of project records, correspondence and diaries, as well as quality control testing to ensure that the Works are executed in accordance with the Contract;

(viii) examine and review sampling measurements of any work that is about to be covered or put out of view before permanent work is placed thereon.

(ix) inspect and test all materials and works to ensure compliance with specifications and giving immediate notice to the contractor in the event that such materials and works fail to comply with the specifications;

(x) inspect regularly the contractor’s construction equipment, installations, housing, medical facilities, etc., and ensure that they are adequate and in accordance with the terms and conditions specified in the contract for the Works;

(xi) ensure that road safety design requirements are implemented in accordance with the contract including the provision of necessary lights, guardrails, fencing, and security;

(xii) issue notices to the contractor advising of any non-compliance with environmental mitigation measures, as set out in the contract documents. Copies of all notices should be provided to the Employer at the time of issue. Before issuing such notices the Engineer should, as appropriate, have advised the contractor of the non-compliance and given an opportunity to the contractor to make good any adverse impact prior to the notice being issued;

(xiii) establish efficient procedures for verifying contractor performance and reporting progress and problems in a timely manner, including quality control reports, quantity survey records, requests for variation or change orders, requests for time extension, and contractor’s claims and invoices;

(xiv) ensure that the contractor does not involve child labor in the execution of the civil works contracts in accordance with the provisions of the contract agreement;

(xv) undertake supervision works; and prepare and issue the following reports, whose format and content should be acceptable to the employer: an inception report, a brief monthly progress report, a detailed quarterly report, and a detailed project completion report;

(xvi) certify payments for the Works against the relevant bill of quantities and issue the Interim Payment Certificates, the Final Payment Certificate and other certificates, including Taking Over Certificate, as required under the civil works contract;

(xvii) keep the Employer and the ADB appraised of implementation problems which could jeopardize the Project goals and objectives and make recommendation on how those goals and objectives can be safeguarded;
(xviii) evaluate claims, disputes, extensions of time, and the like, including issuing variation orders as appropriate and in line with the limits placed on the Engineer’s authority, as well as advising the Employer on all matters relating to the execution of the Works;

(xix) issue of the Engineer’s decisions/instructions as appropriate under the civil works contract;

(xx) provide timely assistance to the contractor in all matters related to interpretation of the contract documents, ground survey controls, planning, quality control testing and other matters relating to the Project;

(xxii) conduct a complete joint review of the works with all stakeholders and ADB, as well as a safety audit, prior to handover of the site to the Employer;

(xxiv) following the issue of the Taking Over Certificate, during the balance of the Contract Period inspect and approve the execution of the outstanding works (if any), as well as the rectification of any defects or damage – advise on any extension to the Contract Period that may be required for such works;

(xxv) the Consultant will, if so required by the Employer, provide any of the following additional services within the contract amount and/or contingencies: (i) prepare reports, including technical appraisals, additional contract documentation, and/or reviewing and commenting on the contractor’s proposals, as may be required for any additional work required for the successful completion of the Project; and (ii) provision of any other specialist services as may be required from time to time.

2. Monitoring, Evaluation, Safeguards, and Liaison with Stakeholders

18. The Consultant's responsibilities will be:

(i) keep a register of technical supervision, recording volumes of works performed by the contractor, comments on construction quality, and remedial actions for elimination of defects on daily basis (the register shall be maintained according to the local instructions for keeping supervision records);

(ii) compile baseline data for all performance targets and indicators as early as possible, but no later than first quarter of the construction mobilization;

(iii) measure progress at the project mid-term and completion stages;

(iv) monitor socioeconomic impacts on beneficiaries through selective household surveys and participatory research methods;

(v) monitor compliance of the project with the provisions preventing discrimination in employment, enforcing gender equality, and reducing risks of spread of communicable deceases; preventing human trafficking, and ensure that such requirements are included in the bid and contract documents;

(vi) monitor compliance with major project assurances (refer to project and loan documents);
(vii) oversee the proper implementation of the environment management plan by the contractors
(viii) ensure that the construction methods proposed by the contractor for carrying out the works are satisfactory, with particular reference to the technical requirements of sound environmental standards on the basis of ADB’s Environmental Guidelines for Selected Infrastructure Development Project (Highways & Roads) and the IEE and EMP prepared for the Project; and
(ix) document results in quarterly progress reports.

19. The Consultant will liaise with government authorities, consultants, NGO’s and other stakeholders concerned with the project implementation.

F. Staffing Requirements

20. The consultants will assist MDF staff in the performance of construction supervision. The team proposed by the consultant shall be composed of skilled and experienced specialists, who will carry out necessary services. The team should be, at a minimum, composed of the following

1. **International Team Members: – indicative 23 person-months**
   Consultants
   1. Team Leader/Senior Road Engineer
   2. Road Pavement and Materials engineer
   3. Structural/Tunnel engineer
   4. Road safety specialist
   Total

2. **National Team Members: – indicative 82 person-months technical staff**
   Consultants
   1. Deputy Resident (Road) Engineer
   2. Hydraulics/Drainage
   3. Soil/Geotechnical Engineer
   4. Site Inspector/ Quality Control Specialists
   5. Quantity Surveyor - (22 person-months)
   6. Environmental Specialist
   7. Electrical/Street lighting Specialist
   Total

3. **Administrative Staff – indicative 36 person-months**
   Consultants
   1. Office Administrator and support
   2. Secretaries – (1x28 person-months)
   Total