

**TERMS OF REFERENCE FOR
CONSULTING SERVICES FOR CENTRAL ASIA ROAD LINKS PROJECT:
CONSTRUCTION SUPERVISION SERVICES FOR LOT 1: ISFANA- KAIRAGACH, LOT
2: BATKEN – KYZYL-BEL, BATKEN ROUNDABOUT – KM 248.**

Background

The program has the overall objective to increase transport connectivity between neighboring countries in Central Asia along priority cross-border road links whilst supporting improvements in road operations and maintenance practices. The road links once rehabilitated will improve access along priority transport connections between major urban agglomerations within the Central Asia region, thereby supporting the creation of an integrated economic region across borders. In addition to each country's capital city, major urban agglomerations include cities such as: (a) Osh city, the second largest city in the Kyrgyz Republic in Osh Oblast, (b) Khujand, the second largest city in Tajikistan within Sugd Oblast, (d) Almaty, the formerly capital of Kazakhstan until 1997 within Almaty Oblast, as well as (e) Andijan (Andijan Oblast), Fergana (Fergana Oblast) and Namangan (Namangan Oblast) in the Ferghana valley.

Objectives

The main objective of this consulting assignment is the supervision of the one probably two civil work contracts. Ministry of Transport and Communications of the Kyrgyz Republic is the Employer for the Project.

The task of this consulting assignment is the supervision of the one and/or two civil work contracts. **(49 person-months International input and 153 person-months Local input)**

Within the task of the assignment the Consultants will be asked to review the design documentation and then carry out the supervision of the works contracts based on designs. The supervision of the works will include (i) working with the contractors to ensure an orderly start-up and timely execution of the works; (ii) a full array of quality assurance activities; (iii) certification of payments; (iv) co-ordination with road works stakeholders; contract administration; project performance monitoring based on identified indicators and preparation of relevant reports; (v) minor designs for problems encountered; (vi) development of variation orders as needed, including scoping, independent pricing, and negotiation; (vii) communication and facilitation of communication among all necessary parties; (viii) the taking over of all finished subprojects; (ix) reporting and (x) training/knowledge transfer.

Consultants will be selected in accordance with the procedures set out in the World Bank's [Guidelines: Selection and Employment of Consultants by World Bank Borrowers \(January 2011\)](#) through Quality and Cost-based Selection (QCBS)". A weighting system of 80% for quality and 20% for cost will be applied.

The consultant's team for construction supervision and benefits monitoring will include:

- (i) Personnel with International experience (49 person-months):**
- (1) senior resident engineer/highway engineer (24 person-months),
 - (2) pavement/materials engineer (10 person-months),
 - (3) structural/bridge engineer (10 person-months),
 - (4) environmental specialist (3 person-months),
 - (5) road safety specialist (2 person-month),

(ii) Personnel with National experience (153 person-months):

- (a) deputy resident engineer/highway engineer No.1 (30 person-months),
- (b) deputy resident engineer/highway engineer No. 2 (24 person-months),
- (c) structural/bridge engineer (13 person-months),
- (d) pavement/materials engineer No.1 (20 person-months),
- (e) pavement/materials engineer No.2 (15 person-months),
- (f) quantity surveyor No. 1 (24 person-months),
- (g) quantity surveyor No. 2 (18 person-months),
- (h) environmental specialist (9 person-months),

Minimum requirements for the Consultant's staff are given below.

Personnel with International experience (49 person-months):

(1) Senior resident engineer/highway engineer, who shall have:

- more than 15 years international experience of the design and supervision of road projects
- more than 8 years experience of acting as a Team Leader / Senior Resident Engineer on the supervision of road construction / rehabilitation projects;
- more than 5 years experience of the supervision of road projects in developing countries;
- a Bachelor's degree and be a chartered engineer or be licensed to practise as a qualified engineer;
- more than 5 years experience of the supervision of IFI funded civil works contracts implemented under FIDIC conditions;
- a good proficiency in written and spoken English language.

(2) Pavement/materials engineer, who shall have:

- more than 10 years international experience in the supervision of road and pavement construction in developing countries;
- more than 10 years experience in supervising and managing quality control of materials for road and pavement construction;
- a Bachelor's degree;
- a good proficiency in written and spoken English language.

(3) Structural/bridge engineer, who shall have:

- more than 10 years international experience in the supervision of road and bridge construction in developing countries;
- more than 10 years experience in supervising and managing of road and bridge construction in developing countries;
- a Bachelor's degree;
- a good proficiency in written and spoken English language.

(4) Environmental specialist, who shall have:

- more than 8 years international experience in similar work in developing countries;
- a Bachelor's degree;
- a good proficiency in written and spoken English language.

(5) Road safety specialist, who shall have:

- more than 10 years experience of carrying out road safety audits and working as a road safety specialist identifying accident black-spots and designing road safety mitigation works;

- a Bachelor's degree;
- a good proficiency in written and spoken English language.

Personnel with National experience (153 person-months):

- (a) Deputy resident engineer/highway engineer**, who shall have a recognised engineering qualification in the Kyrgyz Republic and more than 10 years experience in the design and construction supervision of road projects.
- (b) Structural/bridge engineer**, who shall have a recognised engineering qualification in the Kyrgyz Republic and more than 8 years experience in the design and construction supervision of bridges and drainage works for road projects, quality control and measurement of works within their respective specialisms on road projects.
- (c) Pavement/materials engineer**, who shall have a recognised engineering qualification in the Kyrgyz Republic and more than 8 years experience in the design, construction supervision of road pavement works and quality control of road projects.
- (d) Quantity surveyor**, who shall have a recognised engineering qualification in the Kyrgyz Republic and more than 5 years experience in the design, construction supervision and measurement of road projects.
- (e) Environmental specialist**, who shall have a recognised environmental qualification in the Kyrgyz Republic and more than 5 years experience in the similar work.

All members of the Consultants' team are expected to work closely with the Client and with Investment Projects Implementation Group (IPIG), who will also contribute local knowledge and expertise. In addition, the training of the local staff is to be observed as an important part of the contract/project.

Consultancy Assignment, Task Description.

Duties and responsibilities

The Consultants will review the design, administer the works contracts including project performance monitoring and preparation of relevant reports and ensure that contractual clauses, whether related to quality or quantities of work, are respected. The Consultants will make the necessary measurements and control the quality of the works, and will co-ordinate all engineering decisions, including improvement of designs if necessary or required for the good implementation of the contract. However, the Consultants will seek prior approval of the Client prior to: (i) modification of the design; (ii) variation order with financial implications, except in an emergency situation; (iii) variations in work quantities; (iv) additional items, sums or costs; (v) approval of additional works; and (vi) approval of time extensions.

The Consultants will be responsible to carry out the following tasks, in consultation with the pertinent parties as appropriate:

- Issue the orders to commence the works;
- Administer the civil works contracts, approve the materials and quality of the works in accordance with the contract;
- Approve the Contractors' work program and the sources of materials;
- Approve the Contractors' working drawings;

- Check the progress of the work, examine and attend the measurement of any work that is about to be covered, and order, if required, uncovering of unsatisfactory works and its satisfactory reconstruction;
- Ascertain and determine by measurement the value of the works in accordance with the Contracts;
- Check Contractors' invoices, claims and other statements with respect to arithmetical errors and compliance with the contracts and issue interim certificates for payments, and certify completion of parts or the totality of the works;
- Inspect the performance of works in compliance with specifications, order, supervise or perform tests on materials and approve or disapprove the Contractor's plant and equipment; order the removal of improper or substandard works and expose work which has been covered without permission;
- Supervise the Contractors in all matters concerning safety and care of the works, and direct operations in case of an emergency situation affecting the safety of life, of the works, or of adjoining property, and ensure that traffic operational safety is met before commencing the works, and issue any work plan or drawing in that respect;
- Inspect the works daily during the construction periods, and issue the fields reports;
- Advise the Client on all matters related to the execution of the contracts including processing of the Contractors' claims;
- Carry out at least quarterly inspection visits during the Defects Notification Periods (which will have a duration of one-year);
- Verify and, if necessary, arrange correction of the "as built" drawings supplied by the Contractors and deliver them to the Client; and,
- In the relevant cases, whenever the works Contract refers to the role of 'the Engineer' (for example in the World Bank Standard Bidding Documents for works) the consultants will perform the part of this role assigned to them by the Client.

In addition, progress meetings will be held regularly with Contractor. During these meetings, formal minutes will be taken by the Consultants and distributed to the Client, the IPIG and the Contractor.

Reporting

The reports that must be produced, frequency, submission timings and an outline of their content are outlined below. These will be dynamic documents subject to amendment to effect improvements or accommodate the needs of the Client, the IPIG and the World Bank. The Consultants shall furnish to the Client the following reports and documents in English and Russian:

(a) Inception Report and Design Review with details of how the Consultants will implement the project (delivery: 3 weeks after contract signing).

(b) Monthly Progress Reports (for each works Contract) commencing at the end of the first month following the date of agreement signed between the Contractor and the IPIG, and ending at the end of the period when the issue of the provisional completion certificate takes place (delivery: one week after last day of each month).

The Monthly Reports should be based on the physical and financial progress, as well as dealing with contractual and technical matters. They will make use of graphics and include statements covering (but not limited to) the following:

- Physical progress related to programs and time;

- Explanations for variances to the above;
- Expenditure related to cash flow forecast and budget;
- Explanations for variances to the above;
- Claims or disputes;
- Human resources, mechanical equipment and materials;
- Testing and quality control;
- Local issues; and
- A Cash Flow forecast.

(c) *Environmental Monitoring Report (quarterly)*, shall be prepared in accordance with the World Bank's requirements for preparation of such reports, but not limited to the above.

(d) *Reports on Project Performance Monitoring*

1. Achievement of project indicators (annual reports)

- Reduction in transport cost for road users, by car and large bus, along the project section;
- Reduction in transport cost for road users, by car and large bus, along the project area;
- Reduction in travel time for road users, by car in project area;
- Increase in traffic one year after project road sections improved or rehabilitated (AADT);
- Proportional increase in the number of rural people in the project area who live within 2 kilometers of an all-section road;
- Increase effectiveness of road safety planning (Road safety planning is conducted in an integrated and comprehensive manner).

2. Performance of interim indicators (six-monthly reports)

- Number of kilometers of all roads rehabilitated under the project;
- Percentage of the total classified road network in the project area in good and fair condition;
- National road Safety Program developed and launched;
- Pilot demonstration projects on road safety along the corridor developed.

(e) *Draft Project Completion Report* (delivery: 4 weeks prior to completion of the contract period completed using the format provided by the Client).

The report will include, but not be limited to, the following inputs:

- Physical progress related to the original program;
- Explanations for variances to the above;
- Expenditure related to original budgets;
- Explanations for variances to the above; and
- Other information to be included in the Project Completion Report if requested by the Client.

Draft sample content list of PCR is attached to TOR (Annex 1)

(f) *Final Report* (delivery: 2 weeks after completion of contract period or after comments on the Draft Completion Report provided by the Client whichever comes later). The Final Report will be based on the Draft Project Completion Report, but will incorporate any comments/suggestions made by the reviewing parties.

Arrangements will be made for some routine reports to be provided electronically by email. Formal deliverables will be submitted both in soft and hard copies (in the latter case 4 copies in Russian and 4 copies in English).

Detailed description of the service

This section of the TOR details the activities that have already be mentioned above. Those activities are now gathered into five tasks:

- Task 1: Design Review.
- Task 2: Management and Supervision of the Works Contracts.
- Task 3: Completion of the Works and Taking Over.
- Task 4: Management and Supervision during Defects Liability Period.
- Task 5: Reporting.

All of the tasks are discussed in turn below.

Task 1: Design Review

The Consultants first task will be to review the design to see if improvements can be suggested. Depending on the timing, it might be that the contractors be selected already. In that case, the scope of task 1 might be reduced.

Task 2: Management and Supervision of the Work Contract

The management and supervision of the works contracts extends across a wide range of activities. As a result, it is possible to divide this task into a number of subtasks:

- Task 2.1 General Project Management
- Task 2.2 Starting the Works
- Task 2.3 Program management
- Task 2.4 Quality Assurance
- Task 2.5 Payment Procedures
- Task 2.6 Coordination with stakeholders
- Task 2.7 Minor design work
- Task 2.8 Variations
- Task 2.9 Contract Administration
- Task 2.10 Site Safety, Traffic Management and Environmental Protection
- Task 2.11 Communications
- Task 2.12 Reporting and record keeping
- Task 2.13 Project performance monitoring based on main indicators achievement and preparation of relevant reports.

The contracts will be tendered using the World Bank Standard Bidding Documents for Procurement of Works (March 2012). This document incorporates a harmonized version of contract conditions, based on FIDIC's "Conditions of Contract for Construction", first edition, published by FIDIC in 1999. The text of the harmonized contract conditions has been agreed between FIDIC and various international financing institutions, and avoids the need for many specific changes to the standard version of FIDIC's "Conditions of Contract for Construction" to account for all non-applicable general conditions. The World Bank has a license agreement with FIDIC that authorizes the use of the harmonized version of such conditions of contract by the Borrowers of the World Bank.

Based on the above, it is assumed that the Consultants would act as the Consultants in accordance with the Bank harmonized edition of the FIDIC Conditions of Contract for Construction 2010 (Pink Book). In the following section, reference is generally made to the General Conditions of the FIDIC Conditions of Contract. Amendments or additions through

clauses in the Particular Conditions will be contract specific and are assumed to be included in the tender documents. In general, these address the role of the client under a FIDIC contract and include amendments due to local regulation or practice. Project implementation must also take place within the framework of the civil code in each beneficiary country. During the inception period, the Consultants will review any requirements under national legislation, including for quality control. The Consultants would discuss these with the Client and assess how the proposed approach for design and supervision could be made compatible with the requirements of the local Civil Code if necessary.

Task 2.1 General Project Management

The Consultant will prepare a short project management manual, taking into account project specific local conditions, coordination with the internal procedures of the Client and the World Bank, and local legislative requirements. The manual will include pro-forma for reports and certificates. All of Consultants' staff involved in the project will follow the manual, which will contain the following sections:

- General provisions, institutional framework, reporting and communication lines;
- Supervision procedures;
- Payment procedures;
- Procedures for mitigating project risks;
- Outline document management system; and
- Annex: Pro-forma for design, supervision and financial reports and/or certificates.

Delegation of powers to local technical staff will be described in project procedures document. In principle, the Senior Resident Engineer and Deputy Resident Engineer will retain decision making capacity for contractual matters as far as is allowed for under the contract, whilst supervision staff will be expected to ensure that the works are carried out in accordance with the contract.

Financial planning and management will also be supported under this task. The objective will be to ensure that works and supply contracts are carried out in accordance with the accounting, budgetary and reporting requirements of the loan agreement. Outputs will include budget cost estimates, cash flows relating to project and program requirements, periodic financial reports on commitments and disbursements, financial reports, in line with Bank requirements.

Task 2.2 Starting the Works

Specific Tasks:

- *Issue the orders to commence works:* At the start of the contract, the Consultant will assist the Client in ensuring that the site is handed over to the contractors in accordance with the contract and with the provisions of the law in Kyrgyz Republic. Working with the Client, the Consultant will issue of the notice to commencement works. The Consultant will also verify that pre-contract documentation, such as performance bonds, the advance payment guarantee, proof of insurances etc are in place. The activities required at the start of works are described below.
- *Commencement Date:* The Consultants shall give the Contractor not less than 7 days notice of the Commencement Date. This date is the date from which the time for Completion of the construction contract is calculated. The Contractor shall then commence the execution of the works as soon as is reasonably practicable.

- *Engineer’s Delegation of Authority:* At commencement of the civil works the Consultants will issue to the Client and the Contractor a letter confirming the appointment of assistants and specifying the duties and authorities which are delegated to them. The delegation will be specifically referenced to clauses of the contract for works.
- *Contractor’s Superintendence, Labor and Plant:* The Consultants will require the Contractor to submit, for approval the names, experience and language capability of (i) the authorized representative, and (ii) the technical site assistants, such as foremen and leading hands, who are competent to properly superintend the works. The Consultants will not unreasonably withhold approval of the Contractor’s superintending personnel but may withdraw such approval and require replacement of Contractor’s staff who are, in the Consultants’ opinion, incompetent, negligent or otherwise undesirable in the performance of their duties.
- *Check Certificates, Insurances, Securities, etc:* The Consultants will verify that the Contractor obtains and provides to the Client within 28 days after the Contractor’s receipt of the Letter of Acceptance, security and performance bonds as are required under the Contract. Prior to the Contractor’s starting any work at the Site, the Consultants will verify that the Contractor has provided evidence to the Client that he has effected all insurances and indemnifications required under the Contract. During the Contract the Consultants will verify that the Contractor maintains the required insurances until the end of the Defects Liability Period.

Task 2.3 Program Management

Specific tasks:

- *Review and Approve the Contractor’s Program:* The Consultants will require the Contractor to submit within the time stated in the Contract, a Works Program in such form and detail as the Client shall reasonably request. The Consultants will require the Contractor to supplement this Program with a written description of the arrangements and methods the Contractor proposes to adopt for the execution of the works, including arrangements for health and safety of staff and the Contractor’s general safety procedures.
- *Cash-Flow estimate:* The Consultants will require the Contractor to submit a detailed Cash-Flow Estimate of payments to which he would be entitled under the Contract based on his works Program.
- *Preliminary Actions:* Prior to acceptance of the Contractor’s submission the Consultants will consult with the Client to establish a schedule for (i) planning, zoning, work permits or other similar permission required for the works to proceed; (ii) hand-over of Possession of Site; and (iii) readiness of any Nominated Subcontractors to fulfill their obligations in conformance with the Contractor’s Program.
- *Systematically Check the Progress of the Works:* The Consultants would intend to take a proactive approach to monitoring progress of the works. All activities will be compared with the Contractor’s works program. Whilst particular attention will be paid to activities affecting the critical path, the Consultants will also monitor other tasks, in order to provide an early warning of any problems. Significant deviations from the Contractor’s program will be discussed with the Contractor during mandatory weekly progress meetings. If, after acceptance of the Works Program submitted, the actual progress of the works does not conform therewith, the Consultants will require the Contractor to submit a revised Program showing necessary

adjustment to ensure the timely completion of the works. The Consultants may require the Contractor to submit a revised Cash-Flow estimate based on the revised Program.

Task 2.4 Quality Assurance

Specific tasks:

- *Quality Assurance Plan and Audit:* The whole process of monitoring will be in accordance with the established and approved Quality Assurance Plan; non-conformance will be identified by the Consultants and corrective action procedures initiated and subsequently monitored. The Consultants may, without notice, commission a Quality Audit as a preventative measure in order to check that: (i) the approved quality plan is being observed; (ii) the conditions of implementation are in compliance with the relevant rules, regulations and guidelines.
- *Approve the Contractors' sources of materials:* the Contractor shall submit to the Consultants for review samples of materials to be used in the works. The Consultants shall review and approve such materials in line with the procedures used for approval of Contractor's Documents. The Consultants shall also continuously monitor the materials used in the works in order to ensure that quality is maintained. To aid in this, the Consultants shall pay periodic visits to sources of natural materials and production and manufacturing plans.
- *Approve the Contractor's plant and equipment Approve the Contractor's working drawings Approve the Setting out of the works:* the Contractor is required to provide the Consultants with details of the arrangements and methods which he proposes for the execution of the works. The Consultants will review these method statements and comment as appropriate. If the Consultants determine that any additional information is required (such as working drawings), the Consultants shall instruct the Contractor accordingly and the Contractor shall prepare them promptly. The Consultants shall also check the setting-out of the works, although the Contractor shall retain responsibility for the correct positioning of all parts of the works.
- *Order Tests on Materials and Completed Works, Order the removal of improper materials or substandard works:* The Consultants will inspect all test records and results supplied by the Contractor and will also carry out additional independent testing in order to verify the quality of materials or the compliance with performance specifications. In case of dispute, the Contractor may be instructed to carry out additional tests. The site staff representing the Consultants will make the appropriate inspections and tests as the works progress and as may be offered by the contractor for acceptance. Independent audit checks, through visual inspections and material testing, will also be undertaken by the Consultants to verify that the Quality Assurance (QA) records provided by the Contractor are in accordance with the statements being made by him. It is noted that the process of day to day inspection and monitoring of the works will generate routine instructions from the Consultants to the Contractor as the essential tool of the Consultants to exercise control. This will ensure that quality and operational requirements are being maintained in accordance with contract conditions.
- *Instructions to the Contractor:* For day-to-day instructions of the Consultants pertaining to inspections, quality control, technical compliance, approvals to proceed and safety, the Consultants will utilize standard forms of instruction identified by serial number, time and date, and instructor's name and position. All instructions will be given or confirmed in writing. Only in cases of emergency will the Contractor be required to act on verbal instructions, which will be followed by written confirmations. Any instructions with a potential financial implication will be first discussed with and approved by the Client.

Task 2.5 Payment Procedures

Specific tasks:

- *Ascertain and determine by measurement the value of the works, check Contractor's invoices, claims and other statements:* Experience has shown that one of the most common causes of contract delays results from delay of payments to the Contractors, which adversely affects their cash flow and consequently the construction progress. The methods of measurement and payment of the works will be specified in the tender and Contract Documents and the general procedures for payments are specified in General and Particular Conditions. However, time periods for payment procedures and formats of statements and certificates are often customized to suit project requirements. The Consultant will analyze the documents and the breakdown of the program of the works of the Contractors and will discuss with the Committee procedures and program for application submissions, certifications and payments, compatible with Bank requirements. Particular attention will be dedicated to clarifying the fiscal issues relevant for project payment procedures, and especially to the Contractor's calculation and payment of VAT. Interim measurement and certification for payment of works completed will be performed monthly by the Consultants in accordance with the provisions of the Particular Conditions. The Contractor is required to submit monthly statements, together with supporting documents and calculations, of the value of works executed for which he considers himself entitled to payment. Each statement should be based on the joint measurement and agreement of quantities of work performed by the Contractor and accepted by the Consultants. The Contract places responsibility upon the Consultants to perform a measurement after reasonable notice from the Contractor that he requires any part of the works to be measured for purpose of interim payment. The Contract also requires the Contractor to attend and assist the Consultants in making such measurement, failing which the Contractor has limited opportunity to dispute the Consultants' determination. In practicality, and to avoid disputes, the Consultant will establish procedures whereby the intent will be jointly to perform and agree the measurements prior to the Contractor's submission of each and every monthly statement. By adoption of the above procedure, the Consultants' checking of the Contractor's statements and subsequent preparation of Interim Payment Certificates becomes less contentious and relates primarily to arithmetic accuracy.
- *Preparation of Interim Payment Certificates:* In his preparation of Interim Payment Certificates the Consultants will apply the Contract provisions in respect of: (i) the value of measured works; (ii) payments under Provisional Sums; (iii) payments for works undertaken by subcontractors (which requires evidence that the Contractor has already made payments therefore to the subcontractors); (iv) value of materials on Site; (v) deductions for recovery of Advance Payments previously made by the Client; (vi) deductions of Retention Money; (vii) application of any escalation indices to determine amounts of any Price Adjustment; (viii) application of any statutory taxes prevailing at the time the Contract was signed; (ix) compensation for any legislated changes to taxes during the Contract; (x) value of day-works performed; (xi) any necessary modifications or corrections to previous Interim Payment Certificates; (xii) currencies of payment and exchange rates; (xiii) interest entitlements arising from previous late payments; and (xiv) other compensations including prolongation costs and other claims. The Consultant will ensure that Interim Payment Certificates will be fully supported by backup calculations (and sketches where necessary) indicating the location and scope of works measured and certified for payment.

Task 2.6 Coordination with stakeholders

There are a number of third parties that will be affected by or will be involved in the works. These may include: local authorities; landowners; utility companies; the police; road users; the media and the general public. The Consultants would propose to carry out a stakeholder review at the start of the Contract, in an attempt to identify the main actors. In particular, the Consultants will work with the Contractor to identify the responsible individuals and bodies for issues of all the required permits and licenses. The Client has the obligation of obtaining planning, zoning or similar permission for the permanent works as required under the laws of Kyrgyz Republic in relation to the execution and completion of the works. The Client shall also provide reasonable assistance for delivery of goods (such as customs clearance) and for export of Contractor's equipment on completion of the Contract. The Consultants will assist the Client in these tasks.

Task 2.7 Minor Design Work

During the course of the works, the Consultant will continue to assess the design and the Contractor's work proposals critically to determine if any changes to either plans or specifications are desirable. Clarifications of the tender dossiers may be required in some instances - in general, such clarifications would remain within the provisions of the Contract and should not necessarily be considered as Variations. The Consultants shall also review the practicality of construction of the Contractor's proposals and comment where appropriate. Both the Client and Contractor shall be consulted on any particular points. The Consultants have the right to initiate variations to the Contract either by an instruction or a request for the Contractor to submit a proposal. It is noted that it is necessary for the Consultants obtain the specific approval of the Client before instruction any variations that increase the Contract Price, the time for completion, or in any substantial way change the scope, character or quality of the works. It is also noted that the Contractor is entitle to submit to the Consultants a written proposal which will allow for accelerated completion, reduction in cost, improve the value of the works, or which will otherwise be of benefit to the Client. The Consultants shall encourage the works Contractor to adopt such an approach and will review any such proposals to determine if they are in the best interests of the Client. All proposals will be fully discussed with the Client, whose specific authority will be sought for an acceptance of such measures. Any changes proposed to the design documentation should be appropriately agreed upon with Client and Designers, approved, and positively evaluated by the State Expert Committee in compliance with the regulations and norms stipulated by the Government of the Kyrgyz Republic.

Task 2.8 Variations, Time extension, Unscheduled works and daywork

Variations:

The Consultant note that the specific approval of the Client be obtained before instructing a variation which is expected to increase the Contract Price, extend the Time for Completion, or in any substantial way change the scope, character or quality of the works. The Consultant will develop procedures to ensure that the Client can provide such approvals in a timely manner, so as not to cause interruption or delays to the works. The Contractor is responsible for the sufficiency of his Tender based on his inspection of the Site and information provided by the Client as described by the Contract. However, there are a number of Clauses in the contract that may entitle the Contractor to additional time, additional payment (or both). For example, it is possible that the Contractor might encounter physical obstructions or conditions which could not, in the opinion of the Consultants, have been foreseeable by an experienced contractor.

Under such circumstance, and only if the Contractor gives timely notice thereof, the Consultants will consult with the Client and Contractor to determine any extension of time or additional costs to which the Contractor should be entitled in accordance with the Contract, and issue a Variation.

Subject to constraints on his authority as stipulated by the Contract's Particular Conditions, the Consultants will instruct the Contractor, in writing to make any necessary or desired variations of the form, quality or quantity of the works including: (i) increase or decrease of work quantities (except as resulting from quantities exceeding or being less than those stated in the Bill of Quantities but not arising from a variation); (ii) deletion of works; (iii) change of character or quality of works; (iv) execution of additional works; and (v) change of sequence or timing of works.

Before issuing such instructions, the Consultants will consult the Client for opinions and comments. Account will be taken of ways to reduce project expenditures, accelerate work progress and generally improve the execution of the works. When discussing such instructions, a review of the original design will be important. In many instances, feedback from the Contractor will also be important.

Extensions of Time

Subject to constraints on his authority as stipulated by the Contract's Particular Conditions, the Consultants will determine and notify the Contractor (with copy to the Client) of the amount of Extension of Time granted in consideration of: the amount and nature of extra or additional work; delays which were outside the Contractor's control, including any delays, impediment or prevention by the Client; exceptional adverse climatic conditions; and other special circumstances. It is important to note that the expiry date of the Time for Completion (calculated from the Commencement Date) initiates: (i) the capping of any price escalation indices used to calculate any Price Adjustment in accordance with Conditions of Particular Application; and (ii) the Client's right to commence application of Liquidated Damages sanctioned under the Contract. Consequently the granting of Extension of Time for Completion will extend the date on which such actions could be implemented. Furthermore, the granting of Extension of Time may entitle the Contractor to additional costs (referred to as Prolongation Costs) during the period of extension. Such costs may include extended Head Office and Site Office overhead costs, from which should be deducted the amount of overheads that the Contractor may have recovered from the value of varied works performed in excess of the tendered Contract Price. It should be noted also that the Consultants are not bound to make any determination of Extension of Time unless the Contractor has given notice and provided particulars of events or delays for which he considers himself entitled to Extension of Time. The Contractor's entitlement to prolongation costs depends on the reason of delay for which Extension of Time is granted. Delay arising from exceptional adverse climatic conditions (such as an exceptionally harsh or prolonged winter which the Contractor could not reasonably have anticipated) is a risk shared by the Client and the Contractor; the Contractor is not entitled to prolongation costs for such portion of Extension of Time granted for this reason, and the date from which the Client could apply Liquidated Damages is extended. The evaluation of prolongation costs is based on the Contractor's resources mobilized at the time of delay for which each portion of Extension of Time is granted. It should not be based on the resources existing during the actual extension period. Consequently, it is very important when determining Extension of Time that the Consultants clearly establishes and records for each portion thereof: (i) the reason for the causing delay; and (ii) the Contractor's site resources existing at the actual time of delay.

Negotiations and Recommend Rates and Prices for Unscheduled Work Items:

When valuing a variation to the contract, the Consultants shall consult with each party in an endeavor to reach an agreement. If agreement is not reached, the Consultants shall make a fair determination in accordance with the Contract. It is noted, however, that the Consultants shall obtain the specific approval of the Client before agreeing or determining any matter which will increase the Contract Price. At the time of instructing a contractor to effect a variation, the cost implications of the variation may not be immediately quantifiable. It may, for example, be necessary to negotiate new rates and prices for new items of work or for existing items whose quantities are substantially changed. It is recommended that, within a short period after issuing an instruction constituting a variation, the Consultants complete their valuation of the variation and quantifies the variation by measurement unit, unit cost and estimated total cost. A formal Variation Order will be prepared by the Consultants and issued to the Contractor by the Client. By keeping a record of these Orders and adjusting the Contract Price by their value, all parties are able more readily to keep track of and plan for the anticipated final cost of the revised Contract. The time implications of each Order will also be examined by the Consultants after consultations with the Client and the Contractor. It is not recommended to issue a Variation Order at the time of each and every minor variation in work. However, the Orders should be issued when there are new payment rates and/or when there is a significant overall cost. The preparation of Orders also serves to discipline the Consultants, the Client and the Contractor in their negotiation and agreement of costs of the varied works.

Daywork:

There may be occasions when the nature of varied work cannot be adequately defined for the purpose of predetermining its scope and difficulty, and, thereby, for the Contractor or Consultants to be able reliably to negotiate or fix suitable unit rates of payment for such works. Under such circumstances the Consultants will instruct the Contractor to execute the varied work on a daywork basis, whereby the Contractor will be paid at the rates and prices set out in the daywork schedule included in the Contractor's Tender for labor, materials and equipment. In respect of works performed on a daywork basis the Consultants will insist that the Contractor delivers each day an exact list of names, occupation and time of all workmen, and a description and quantities of all materials and equipment used on the work, as verified by signature of the Consultants' site representative. Failing this compliance the Consultants may decline to certify payment or certify only such payment as they considers fair and reasonable.

Task 2.9 Contract Administration (Contractor's Claims; Disputes)

Contractor's Claims

The Consultants will assist the Client to avoid, mitigate and resolve disputes and potential claims. Efforts will be focused on avoiding disputes, mitigating the impacts of disputes on the project budget and schedule, and providing clear documentation to assist in the resolution of disputes and claims. Due to extensive experience in managing large construction projects, the Consultant experts should possess a clear understanding of the origin and nature of disputes and claims.

Regarding Contractor claims, the onus is upon the Contractor to submit notice to the Consultants, copied to the Client, of its intention to claim any additional payment pursuant to an event within 28 days after the event having first arisen. Thereafter the Contractor is required, within 42 days of the event occurring, to submit detailed particulars of the grounds for and amount of claim. When the event has a continuing effect the particulars are deemed as interim and the Contractor is required to submit regular further accounts, of which the final account must be submitted within 28 days after the end of the effects of the event. Failure to comply with these provisions or to submit sufficient particulars will limit the Contractor's

entitlement to the Consultants' discretionary determination based on available contemporary records. The Consultants should consult with the Contractor and Client before rendering its determination of a Contractor claim. There is theoretically no time limit upon the Consultants for this process. However, the Contractor is entitled to certification by the Consultants of interim payment of such amounts of a claim for which substantiating particulars have been submitted. Consequently any unreasonable delay by the Consultants or Client in addressing a sufficiently substantiated whole or part of a claim could entitle the Contractor to interest on unreasonably late payment of the substantiated amount. Therefore it is important for the Consultants and Client to address Contractor claims promptly.

Upon receipt of a Contractor claim the Consultant approach will first be to establish its validity in principle in accordance with the terms of the Contract, and to advise the Client and Contractor of this assessment in principle. If the claim is valid in principle, the Consultants, while remaining in consultation with the Contractor and Client, will then assess the quantum of the claim and render a determination in conjunction with the Client, as provided for in the Particular Conditions.

Disputes

Disputes might arise between the Contractor and the Client arising out of the Contract or the execution of the works, for the resolution of which either party may request a Consultants' Decision. When so requested, the Consultants are required to render a decision within 42 days. The Consultant approach to making such decisions will be similar to that for assessing Contractor's claims; that is, first to determine the principle of the matter and then to assess the quantum. If the Contractor is dissatisfied with the decision, or in the event that the Consultants does not or is unable to render such decision, then either party is entitled to refer the matter to the Dispute Board, for which the Contract stipulates procedures.

Task 2.10 Site Safety, Traffic Management and Environmental Protection

Environmental Protection

In order to comply with the environmental policy of the Bank, it is usual for financial and technical reports to be accompanied by reporting on environmental conditions and procedures. The Environmental Impact Assessment (EIA) for the project has identified a number of mitigation measures to be incorporated into the works contracts. These include permanent measures included in the design (such as planting, treatment of runoff water from the roads etc), as well as temporary measures required during construction (protection of watercourses during construction activities, dust suppression, limitation on transit routes for construction traffic, restrictions on noise etc.). The Consultants will monitor the works to ensure that these requirements are being followed, and will assist the Client in preparing the necessary supporting documentation for reporting for the Bank. In order to demonstrate compliance, the Contractor is required to submit a detailed program for Environmental Protection for the approval of the Consultants, within the same period as the Contractor's Working Program. The Consultants will also monitor that the Contractor is fulfilling his or her obligations for protection of the environment. If necessary, short term expertise can in environmental management can be provided to support monitoring activities or to address other specific issues.

Site Safety

The Contractor shall: (i) comply with all applicable safety regulations; (ii) take care for the safety of all persons entitled to be on the site; (iii) use reasonable efforts to keep the Site and works clear of unnecessary obstruction; (iv) provide fencing, lighting, guarding and watching of the works when necessary; (v) provide any temporary works including roadways, footways,

guards and fences for the use and protection of the public and landowners. The Consultants will monitor the Contractor approach to each of these requirements. In the event that the Contractor fails to fulfill these obligations after instruction to do so, the Consultants may, according to the seriousness of the deficiency and its risk to safety, order a suspension of the works until the Contractor rectifies the deficiency.

Review and Approval of Traffic Management Schemes

Safety for traffic and for project personnel during the works will be of paramount importance. It may be necessary to coordinate traffic management measures on adjacent stretches of works in order to avoid long lengths of single lane working. This may require coordination between different contracts. Temporary traffic management must also take into account the need to provide for continuous operation of public transport and for pedestrians. For temporary traffic management the Contractor will be required to prepare a Traffic Management Plan and submit it for the approval of the Consultants, Client and Police.

Task 2.11 Communications

During the construction period the Consultants will initiate Weekly and Monthly Progress Meetings with the Contractor at which the Client will be encouraged to attend and participate. The purpose of the meetings will be: (i) to review progress to date; (ii) to discuss and resolve administrative and communication problems; (iii) to discuss and resolve technical issues or problems; (iv) to discuss and resolve contractual issues or problems; (v) to discuss plans to avoid potential delays and to mitigate any current or anticipated delays; (vi) for the Contractor to submit and the meeting to review the proposed program of works for the forthcoming period, including identification of any required actions by the Client or Consultants to facilitate such program; (vii) for the Contractor to submit any revisions to its cash flow estimates; and (viii) any other pertinent business.

The Consultant will prepare and distribute to the Client, Contractor and all other participants formal minutes of the meetings. The Consultant recommends that in the absence of any disagreement of the minutes within an established limited time period they will be deemed to be a record of formal and contractual communication.

Task 2.12 Reporting and record keeping

“As-Built” drawings

During the course of the contract, the “As-built” drawings will be updated whenever there is a change or variation to the works. The basis for the “As-Built” drawings will be the contract drawings - the Consultants will be provided with an electronic copy. A system will be set up whereby any administrative order, variation, instruction to the Contractor or clarification is assessed to determine if there is a requirement to change the drawings. If this is the case, the relevant change will be made on the master drawings, with a reference to the contract communication. Drawings will be updated on a regular basis throughout the project

Record keeping

As part of the Manual referred to under Task 2.1, the Consultant will develop a project Document Management System (DMS). The system will focus on the management of the following data:

- Contract documents, correspondence and construction drawings;
- Approval of Contractor’s drawings;
- Contractual issues;
- Progress monitoring, physical and financial;

- Minutes of meetings;
- Audits;
- Design manuals, codes, standards, etc.;
- Legal issues; and
- As-built drawings, data and documents.

In order to assist in the record keeping, the Consultants will also set up and maintain a project database. This will contain all of the main contract information for each contract. Database records will be updated at least every month, and will incorporate information from monthly supervision reports.

Reporting

Reports are to be prepared in line with the requirements of these Terms of Reference and as described in Task 5. It is important that the reports anticipate problems and, where appropriate, suggest remedies as early as possible. In addition to regular reports there may be a need for the Consultants to submit special reports on particular site problems. These should always cover the financial and program implications. The availability of consistent, quality information from sites will allow the Client to monitor contracts effectively. The Client should be in a position to provide an overview of progress on the contracts and to always be able to identify aspects that could lead to cost or time overruns.

Task 3: Completion of the Works and Taking Over

Preparation of Taking Over

In response to the Contractor's notices of application, the Consultants will determine if the works are ready to be taken over. If the works are complete, the Consultants will prepare and issue Taking-Over Certificates for the works. The effective date of any Taking-Over Certificate will mark the commencement of the 12-month Defects Notification Period for the part of the works to which the Taking-Over Certificate relates. It also marks the date from which the Client takes responsibility for maintenance of the completed works. A Taking Over Certificate can be issued provided minor outstanding work or defects, in the opinion of the Consultants, will not substantially affect the use of the works. The Consultants' approach will be to facilitate communication and understanding between the Client and Contractor to obtain agreement. Unless otherwise agreed by the parties, the Consultants' determination should be based on the readiness of the works to be taken over without obstruction or impediment to the Client's or the public use of the works. When issuing any Taking-Over Certificate the Consultants will attach thereto a list of works remaining to be completed and defective works to be rectified by the Contractor during the Defects Notification Period. Such list will not limit the Contractor's obligations to rectify any other defects, which may be identified by the Consultants during the Defects Notification Period. Upon issue of a Taking-Over Certificate for a part of the works or the whole of the works, the Consultants will certify repayment to the Contractor of one half of the Retention Money applicable to the part of the works to which the Taking-Over Certificate pertains.

It should be noted that according to the KR national regulations at the end all works completed will be taken over by the Working Commission first and then finally by the KR State Commission. The Consultant has to deal with all comments arose from both Commissions.

Preparation of Final Accounts

Within 84 days after receiving the Taking-Over Certificate for the works, the Contractor shall submit a statement at completion showing: (i) the value of work done in accordance with the

Contract o and further sums considered to be due; (ii) an estimate of any other amounts which will become due. The Consultants certify this certificate as for Interim Payment Certificates.

Procedures for the Defects Liability period

The Consultants will outline the obligations of the Contractor during the Defects Liability Period, and contain a list of outstanding work items to be completed. The Senior Resident Engineer will also prepare an inspection program.

Task 4: Management and Supervision during Defects Liability Period

After the issue of any Taking-Over Certificate the Consultants will enforce any obligation placed on the Contractor to remove from that part of the Site to which the Certificate relates all obstructions, surplus materials, plant, wreckage, rubbish and Temporary works. Upon completion of the whole of the works the Consultants will require the Contractor to remove all plant, equipment and materials except those required to complete any outstanding or remedial works and facilities required by the Consultants during the Defects Notification Period.

For each part of the works for which a Taking-Over Certificate has been issued, the Contractor is responsible during the related, subsequent, 12-month Defects Notification Period for completing all outstanding works (as defined in the Taking-Over Certificate) and rectifying any defective works which are identified before or during the Defects Notification Period. The Consultants' responsibility will be to: (i) undertake periodic inspections of the works (on a quarterly basis) during the Defects Notification Period to determine any work defects that might become apparent; and (ii) supervise the Contractor's completion of any works outstanding and remedial works to rectify defects during the Defects Notification Period for each stage of the works.

The Contract shall not be considered completed until a Performance Certificate is signed by the Consultants and delivered to the Client and copied to the Contractor, stating the date on which the Contractor shall have completed its obligations to complete the works and remedy any defects to the Consultants' satisfaction.

The Consultants will issue a Performance Certificate within 28 days of expiry of the last Defects Notification Period. The Consultants shall also recommend the release of any remaining bonds and retentions. Notwithstanding issuance of the Performance Certificate, the Contractor and Client shall remain liable to each other for the fulfillment of any obligations incurred under the Contract prior to issuance of the Performance Certificate and which remain unperformed at the time of issue. Immediately following the issue of the Performance Certificate the Consultants will ensure that the Contractor clears the site and reinstates it to the requirements stated in the works Contract. If the contractor fails to observe this requirement within 28 days of issue of the Performance Certificate the Consultants will advise the Client of the necessary actions that may be taken by the Client to mitigate the situation.

Task 5: Reporting

A number of reports are scheduled to be provided over the course of the assignment. The detail of those reports has already been described in general terms earlier in this document. The more comprehensive description is provided below:

- *Inception Report and Design Review*, to be issued within three weeks from the signing of the contract. It shall: (i) further define the aims and objectives of the services to be provided; (ii) set out a detailed work program for the rest of the project; (iii) identify potential problems to be

overcome and possible solutions; (iv) identify counterpart staff in the Client's office and other organizations, and identify their other commitments; (v) include a stakeholder analysis identifying other third party organizations involved in the project implementation process; (vi) include a review of the current status of project implementation; and (vii) conclusion on the design.

- *Monthly Progress Reports* for works contract. These will describe the physical and financial progress of the works, and will address contractual and technical matters. They shall provide information on (tentative list that can be amended): (i) a description of physical progress, with reference to the program; (ii) explanations for differences between actual and forecast progress; (iii) a summary financial report containing cash-flow forecasts and budget expenditure; (iv) status of payments and requests for payment; (v) explanations for differences between actual and forecast cash-flow o summary of claims and disputes; (vi) major milestones, obstacles, achievements, constraints on progress o problems encountered and appropriate identified solutions; (vii) remarks on procedural issues; (viii) variations and proposals for future variations to the timing and budgets of individual activities; (ix) a projection of activities for the forthcoming month; (x) recommendation for further actions and improvements, both short- and long-term; (xi) records of human resources, mechanical equipment and materials. testing and quality control; (xii) local issues/stakeholder issues; (xiii) a summary of environmental issues, including compliance with the EMP.
- *Environmental Monitoring Report (quarterly)*, shall be prepared in accordance with the World Banks requirements for preparation of such reports, but not limited to the above.
- *Project performance monitoring reports* and achievement of main key indicators by project, some indicators require annual report, some require six-monthly reports. Indicators requiring reporting are listed in section Reports of this document.
- *Performance of interim indicators (six-monthly reports)*
 - Number of kilometers of all roads rehabilitated under the project;
 - Percentage of the total classified road network in the project area in good and fair condition;
 - National road Safety Program developed and launched;
 - Pilot demonstration projects on road safety along the corridor developed.
- *Draft Project Completion Report*, to be delivered 4 weeks prior to completion of the contract period. These will provide an overview and measure of success of the project. They shall contain: (i) a summary of information contained in the previous monthly reports; (ii) an overall review of the project; (iii) a description of physical progress, with reference to the program; (vi) explanations for differences between actual and forecast progress; (v) a summary financial report containing cash-flow forecasts and budget expenditure; (vi) the status of payments and requests for payment; (vii) explanations for differences between actual and forecast cash-flow o summary of claims and disputes; (viii) an assessment of impact of project on the number of people employed; (ix) a report on problems encountered and how they were overcome; (x) recommendations for maintenance works; (xi) report on the Environmental Monitoring Program.
- *Final Report*, to be delivered 2 weeks after completion of the contract period or after comments on the Draft Project Completion Report provided by the Client. The contents will be as for the draft completion report, with the incorporation of comments/suggestions from the reviewing parties.

Staffing

The applicants shall propose and justify the range of disciplines to be included in the core project team and the complementary skills of short-term specialists that will allow the Consultants to fulfill their duties. Inputs by foreign and local specialists should be clearly indicated. The applicants shall name individuals to participate in specified roles within the project team and provide full curriculum vitae and any other relevant information. The Consultants team members are expected to have a sound knowledge of highway engineering work and relevant previous experiences in highway detailed design in the region. They need to have significant knowledge and experience in implementing a comprehensive set of activities similar in nature and volume with the ones included in the Project. In addition to the technical expertise relating to highway construction, the Consultants team should have specific experience in the management environmental and social matters, sufficient knowledge of public consultations for major infrastructure projects, and the capacity to manage information and awareness campaigns.

The Consultants shall employ adequate number of qualified personnel to be able to efficiently and comprehensively fulfilling the duties described above. The Consultants team is supposed to have at minimum the experts listed below:

- (i) **Personnel with International experience (49 person-months):**
 - (1) senior resident engineer/highway engineer (24 person-months),
 - (2) pavement/materials engineer (10 person-months),
 - (3) structural/bridge engineer (10 person-months),
 - (4) environmental specialist (3 person-months),
 - (5) road safety specialist (2 person-month),

- (ii) **Personnel with National experience (153 person-months):**
 - (a) deputy resident engineer/highway engineer No.1 (30 person-months),
 - (b) deputy resident engineer/highway engineer No.2 (24 person-months),
 - (c) structural/bridge engineer (13 person-months),
 - (d) pavement/materials engineer No.1 (20 person-months),
 - (e) pavement/materials engineer No.2 (15 person-months),
 - (f) Quantity surveyor No.1 (24 person-months),
 - (g) Quantity surveyor No.2 (18 person-months),
 - (h) environmental specialist (9 person-months),

Before any key staff of the Consultants takes up or leaves his/her position, the Consultants shall first obtain the agreement of the Client as to the timing of the event. Similar agreement should also be obtained if proposed staff is to be substituted.

Facilities - Office Accommodation and Vehicles

The Constructor shall also provide for all necessary administrative, secretarial, translation and interpretation services.

The Constructor shall provide the facilities, accommodation and the equipment necessary to perform his services, i.e. office equipment (computers, printers, photocopiers, telephones and fax and software). The Contractor will be responsible for provision and servicing of transportation and accommodation for all his personnel.

The Contractor will provide the Consultant with office on site. Office in Bishkek will be the Consultant's responsibility.

Time schedule

The Services to be provided by the Consultants are expected to commence in 2014, one month after the signature of the contract. This one month period represents the time that the Consultants will need to mobilize its key staff. The duration of the services of the assignment will be 36 months (including DLP of 12 months) as a preliminary estimate and could be extended if necessary.

The Consultant's total time input for the activities described in these TORs is estimated to be for International 49 man months and National 153 for key staff over a period of three years. The Consultants team is expected to complete their assignment when the contract for works is completed.

DRAFT SUBJECT TO CHANGE