

TERMS OF REFERENCE

Ministry of Transport and Communications of the Kyrgyz Republic

CENTRAL ASIA ROAD LINKS PROGRAM (CARs)

International Individual Consultant on Improvement of road operations and maintenance practices (Axle Load Control and Asset Preservation and Maintenance)

A. PROJECT BACKGROUND AND OBJECTIVES

1. The Central Asia Road Links Program (CARs) 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: (i) Osh city, the second largest city in the Kyrgyz Republic in Osh Oblast, (ii) Khujand, the second largest city in Tajikistan within Sugd Oblast, (iii) Almaty, the formerly capital of Kazakhstan until 1997 within Almaty Oblast, as well as (iv) Andijan (Andijan Oblast), Fergana (Fergana Oblast) and Namangan (Namangan Oblast) in the Ferghana valley.

2. The components of the First Phase of the Central Asia Road Links Program (CARs-1) will focus on the Kyrgyz Republic and include the component on rehabilitation of priority 56 kilometers of road sections in Batken Oblast along and within close vicinity of the road corridor Osh-Batken-Isfana connecting to Tajikistan, and the component to finance the provision of goods, and consultants' services for the improvement of road operations and maintenance practices. The improvement of road operations will include a review of regional standards, norms, and parameters on vehicle (truck) weight and axle load limits and tariffication as well as the development of a strategic plan for the institutional arrangements for transport control, the setting up of an axle-load control system and methods for enforcement of axle load limits.

3. Overloading is a serious problem in the Kyrgyz Republic, although there is little recent data available to confirm its magnitude. Pavement deterioration, even on some newly constructed roads, demonstrates the problem, and the Ministry of Transport and Communications of the Kyrgyz Republic puts highest priority at road preservation, with particular focus on improvement of weigh and dimension (transport) control as well as improvement in maintenance practices. Road asset preservation is currently included into the new draft sector strategy as concept major goal.

4. To this end, the Ministry of Transport and Communications of the Kyrgyz Republic (herein, MOTC) through its Investment Project Implementation Group (herein, IPIG) is in the process of procuring High-Speed Weight-In-Motion systems at two locations (Sosnovka and Kemin) in order to complement static weight scales. The procurement is done based on Design-Supply-Install method and the bidding process is at the final stage.

B. SCOPE OF WORKS

5. In order to improve road operations and maintenance practices, the MOTC seeks support and input from an internationally hired individual consultant covering two major areas:

- Improvement and/or adjustment of legislation and specifications related to road preservation and maintenance to ensure sustainability of investments;
- Preparation of a strategic plan on weight and dimension (transport) control and technical support during installation phase and implementation of high-speed weigh-in-motion systems at 2 pilot locations.

6. The tasks of a Consultant will consist of the following tasks/ outputs:

I. Road Asset Preservation and Road Maintenance

Activity 1.1: Analysis of the Legal, Technical, and Institutional Framework

The consultant shall base the initial phase of his/her assignment on a large consultation and fact-finding mission with the various actors in the road sector in the Kyrgyz Republic. The aim is to draw an exact picture of the road asset preservation and maintenance activities currently carried out, the procedures used to apply, to check and to pay them, and the scope of their application.

The institutional and legal analysis shall show:

- on which legal basis the present routine maintenance works are carried out and paid for, and what legal changes would be required;
- what official standards for the works are currently established and approved, and what organizations are involved;
- clarify the role of the different Ministries and Institutes, in particular the committee for Architecture and the State Expertise.

This Analysis shall be presented as part of the Inception Report.

Activity 1.2: Proposal of Typical Routine Maintenance Works and Development of Unit Rates for Typical Works

The objective of this activity is to develop a draft set of technical standards for routine maintenance road and structural works, for the use in the Kyrgyz Republic. The Consultant is free to propose any other initial documents and standards serving as template. The standards should include typically:

- an initial explanation and notes for the users
- a numeration system for all works, with sub-divisions at various levels
- the detailed description for individual items
- the proposed units for payments
- and the detailed description how the works will be carried out, and what materials shall be used

The Standard, serving as the guidance for the preparation of the future specifications for Routine Maintenance Contracts shall be subdivided into activities, similar to the following:

- Cleaning and Patrolling
- Earthworks
- Pavements
- Drainage
- Bridges
- Tunnels (subdividing structural works, electrical & mechanical facilities)
- Road Equipment, Marking and Signs
- Landscaping and Finishing
- Winter Maintenance

After developing the set of standard routine maintenance works, a cost estimating exercise should be carried out to estimate for each item and aggregate unit rate.

- Gather unit rates from previous contracts, with DEPs (internally) and private companies (for periodic maintenance but also rehabilitation works) to provide a draft unit cost for each of the routine maintenance actions listed above. The cost estimate should be prepared according to the list of standards developed, as much as possible.
- Compare the resulting costs obtained by the "aggregated" and the traditional "Gosstroy" method, overall and by items (earthworks, structures, bituminous works, marking, signs etc.).

The resulting outcome should be discussed with the beneficiaries and other local actors of the road sector, and discussions should conclude on the possibility to introduce such simplified costing methods in (at least) a pilot contract.

Activity 1.3: Prioritization and Programming of Works

This will include introduction of simple planning tools for routine maintenance, as:

- (a) Carrying out inventories and condition surveys, to a format to be proposed and agreed.
- (b) Reporting and possible tracking of all works in a digitized manner yielding towards a RMMS (routine maintenance management systems), in a format to be proposed and agreed.
- (c) Establishing clear rules for the allocation of funds according to the importance of the sections in the network and their condition.
- (d) Preparing a description of required tasks based on the output, not the input (eg. not the type of technology used) and linked to the standards mentioned above.

The principles of the improved planning and programming of works both for routine maintenance and periodic maintenance should be applied on the particular context of the service level agreement (SLA) established between Osh-Batken-Isfana UAD and MOTC/DDH.

Activity 1.4: Monitoring of the SLA in Osh-Batken-Isfana UAD

Linked to the previous activity, the Consultant shall assist the UAD OBI to program and plan its maintenance works to be able to achieve the service levels required under the SLA with DDH.

The Consultant shall deliver Technical Assistance to both UAD/OBI and DDH during the implementation of the SLA. This includes following the outputs and outcomes arisen from the monitoring of the maintenance works, with possible adaptation of some indicators if required. The consultant shall focus on the training of the beneficiaries and all stakeholders, with short and flexible missions on site to follow the evolving needs of the project and contract.

The Consultant is expected to pay regular visits to the UAD and the DEPs, to :

- (a) Carry out surveys of the project road and assess the condition and works implemented, for the running month, in accordance with the plan and the needs;
- (b) Analyze the next monthly working program of the DEPs / UAD and state on their appropriateness, when appropriate, assist in preparing the next yearly budget requests and annual program;
- (c) Assist in the preparation of the monthly reports, and in particular the assessment of the service levels;
- (d) Apply the rules for the allocation of funds according to the findings of the previous tasks.

Activity 1.5: Dissemination

Towards the end of the assignment, the Consultant shall organize a 1/2-day work-shop or seminar, presenting the draft proposed documents and experience.

The seminar should be open to a wide range of private and public stakeholders from the construction industry, including but not limited to MoT, public and private national and international design offices and consultants, contractors.

Participants should also include IFI's present in the region and active in the road sector.

The aim of the seminar is to get a large feed-back on the work done and on the proposed new methods to carry out and pay for routine maintenance, and to raise local commitment, required before implementing the proposed changes.

II. Weight and Dimension (Transport) Control

Activity 2.1: Strategic plan on weight and dimension (transport) control

The objective of this activity is to develop a strategic plan on weight and dimension (transport) control for the Kyrgyz Republic. The Consultant is free to propose an outline for the plan serving as template. The strategic plan should at the very least include:

- An assessment the vehicle axle overloading problem in the Kyrgyz Republic, including (i) assisting MOTC in conducting axle load surveys with the available equipment to provide updated data on the scale of overloading on the road network; (ii) analyzing the causes of axle overloading; and (iii) recommending on how to address the problem.
- A review of existing axle load legislation and regulations in the Kyrgyz Republic and neighboring countries (at least China, Kazakhstan, Uzbekistan, Tajikistan, Turkey, Iran) and review of the structure of fines for overloading, methods of enforcement and entities involved on enforcement.
- Review the regulation on granting special permissions for the transport of overloaded loads on public roads for loads that cannot be subdivided (e.g. liquids), without compromising the need to control abnormal transport and protect roads and bridges.
- Review sanctions paid by foreign vehicles, transporting goods into or in transit through the Kyrgyz Republic, for overloading and other charges to ensure they pay for the damage done to Kyrgyz Republic roads;
- Provide advice to MOTC on any amendments to legislation and regulations necessary for the Kyrgyz Republic to harmonize its legislation with that of neighboring countries.
- Provide advice to MOTC on any amendments to legislation and regulations necessary to ensure that MOTC has the legal powers: (i) to stop vehicles on the highway and direct them to off-load cargo, (ii) to apply fines for overloading; and (iii) to do direct enforcement of overloading, where overloaded trucks identified by weight in motion scales are automatically fined without being stopped to be weighted by more precise scales.
- Assess if all conditions required for direct enforcement of overloading are met in the Kyrgyz Republic (e.g. legislation and regulations, vehicles identification database, information technology, postal and banking system, etc.) and if not propose a plan to meet the requirements.
- Review the role of all Kyrgyz Republic entities that work on issues related to the enforcement of overloading to ensure that the obligations and roles of all entities are clearly defined. Propose a plan to enhance the coordination among these entities.

- Advice MOTC of methods for monitoring axle load and the effectiveness of different technologies, and assist in the procurement and installation of axle weighing equipment that might be required at selected locations.
- Recommend a program to increase the public awareness of the need for vehicle axle load control and provide advance notice to the public of overloading control procedures to be implemented.
- Prepare a plan for installing weighing stations for the whole road network managed by MOTC and long-term strategy on axle load control in the country. The plan should indicate the preferred locations, method for axle load enforcement at each location (manual selection, automatic screening and pre-selection, or direct enforcement), equipment requirements (technical specifications), coordination among Kyrgyz Republic entities requirements, timeframe, and investment, maintenance and operating cost estimates.

Activity 2.2: Technical support during installation phase and implementation of high-speed weigh-in-motion systems (HSWIMs) at 2 pilot locations

The objective of this activity is to provide support to MOTC and its IPIG installation/ implementation phases of HSWIMs at 2 pilot locations. Specifically, the consultant is expected to:

- Provide technical advice to MOTC/ IPIG during the installation of HSWIMs and in coordination of the different entities in the Kyrgyz Republic involved with overloading issues to ensure best use of the system;
- Share good practice in the operation and maintenance of the HSWIMs;
- Provide technical advice to MOTC on conducting acceptance-related tests and procedures.
- Assess the outcomes of the HSWIM pilots and if successful, design a replication model for the HSWIMs pilots.

Activity 2.3: Dissemination and Workshop

Towards the end of the assignment, the Consultant shall organize a 1/2-day work-shop or seminar, presenting the draft proposed documents and experience.

The seminar should be open to a wide range of private and public stakeholders from the construction industry, including but not limited to MoT, public and private national and international design offices and consultants, contractors.

Participants should also include IFI's present in the region and active in the road sector.

The aim of the seminar is to get a large feed-back on the work done and on the proposed new methods to carry out and pay for routine maintenance, and to raise local commitment, required before implementing the proposed changes.

C. Requirements

The consultant should have higher educational background in road engineering and/or in transport economy with, at least, 8 (eight) years of work experience in planning, road asset management systems, weight and dimension control;

- Experience in weight-in-motion systems and knowledge of modern IT-based systems applied around the world in weigh and dimension control;
- Experience on carrying out of obligatory metrological examination (the main concept of metrology, the principles of modern measuring devices building-up and their capacity, methods and gages of various dimensions, definition of measurements results accuracy).

- At least 3 years of work experience in road sector in the CIS countries. Experience in the Kyrgyz Republic or other countries in Central Asia would be an asset.
- Experience in reviewing and drafting of legal and regulatory documents in the CIS countries.
- It is expected that relevant specialists of the Ministry of Transport and Communications of the Kyrgyz Republic will closely work with a consultant.
- The Consultant is required to provide all necessary support personnel, including interpreters and translators as necessary. The cost of the required translator/interpreter shall be included in the Consultants financial offer.
- Knowledge of Russian language a plus.

D. Reporting

7. The International Individual Consultant will be closely working with the MOTC's specialists authorized by the MOTC to work on road asset management and road maintenance as well as dimension and weight (transport) control. The consultant will also liaise with IPIG for the procurement of HSWIMs in 2 pilot sites. Individual specialists to work with will be assigned by the Deputy Minister of Transport and Communications of the Kyrgyz Republic in liaison with the Director of the Investment Projects Implementation Group (IPIG).

8. Specifically, the Consultant should directly report to the Deputy Minister of Transport and Communications of the Kyrgyz Republic, Head of Road Management Department (DDH), as well as Investment Projects Implementation Group (IPIG) Director. Any output documentation should be submitted to the MOTC in both English and Russian languages.

9. The MOTC will provide the consultant all support needed for reviewing regulation and legislation related to road preservation and axle load, in terms of personnel and logistics, and any other support needed.

10. Accommodation of office space within IPIG for the consultant is to be provided by MOTC.

E. Deliverables

11. The following reports shall be submitted both in English and in Russian language by the Consultant in the process of conducting the work. Outputs will be:

Deliverable	Submission Date and Observations
Inception report	3 weeks upon the contract effectiveness date; the report should include a detailed assignment implementation plan and the Analysis of the Legal, Technical, and Institutional Framework (activity 1.1)
Monthly reports	Monthly reports with a description of the work accomplished and thematic reports (e.g., report of review of legislation and regulations, reports on technical evaluation of bids for HSWIM, HSWIM acceptance reports, etc.), as required under the contract. The Consultant's monthly reports shall be compiled no later than the 5th of the month following the reported months, in a free written and electronic form (no more than 5 pages) The monthly reports should also cover monitoring of the SLA in Osh-Batken-Isfana UAD and description of support provided to DDH and OBI UAD (activity 1.4). The monthly reports should also cover technical advice provided to MOTC/IPIG during the installation of HSWIMs, sharing of good practice in operation and maintenance of HSWIMs.
Draft prioritization	Within 5 months upon the contract effectiveness date; the report shall

and programming of works	include the results of the assessment of road preservation-related problems in the country (activity 1.3).
Strategic plan on weight and dimension (transport) control	Within 7 months upon the contract effectiveness; a draft strategic plan on weight and dimension (transport) control for the Kyrgyz Republic should be developed, to be finalized by month 10 upon contract effectiveness, after consultation with relevant stakeholders (activity 2.1).
Draft set of technical standards for routine maintenance and structural work	Within 12 months upon the contract effectiveness; the draft set of technical standards for routine maintenance works and structural works should be developed (activity 1.2)
Report on assessment of the outcome of HSWIM pilots	Within 15 months upon the contract effectiveness; the report shall include a description of the HSWIM pilots, lessons learned and if successful a proposal to replicate the HSWIM pilots throughout the country (activity 2.2)
Dissemination and Workshops	Within 17 months upon the contract effectiveness, at least two ½ day workshops and seminars with relevant stakeholders should be held to inform about the outcome of the work.
Summary report on lessons learnt on SLA implementation	At the end of the assignment a report summarizing major lessons learnt and recommendations for further adjustments, if necessary, and dissemination.
Final report	Within 18 months upon the contract effectiveness date; the report shall contain final versions of materials presented under the contract.

12. - The final report shall summarize the entire scope of work performed under the contract; it shall be submitted to the MOTC during the contract completion month in hard copy and in an electronic form. The reports shall be submitted to the MOTC's authorized representative. It is expected that the MOTC will review and approve (or comment on) the materials submitted by the Consultant within 2 weeks upon receipt thereof. The Consultant shall take action on the comments (if any) within the following 2 weeks.

F. Duration

13. Duration of the assignment is 18 months with an estimated input of about 12 man-months. A Consultant will be mainly based in MOTC in Bishkek with regular visits to the HSWIMs two pilot sites as well as Batken Oblast (OBI UAD). Payment schedule is the following:

Month 1 and Inception Report – 10%
Month 2 – 5%
Month 3 Technical evaluation of bids – 5%
Month 4 – 5%
Month 5 – 5%
Month 6 – 5%
Month 7 – 5%
Month 8 – 5%
Month 9 – 5%
Month 10 – 5%
Month 11 – 5%
Month 12 – 5%
Month 13 – 5%
Month 14 – 5%
Month 15 – 5%
Month 16 – 5%
Month 17 – 5%
Month 18 and Final report – 10%