

# **MINISTRY OF TRANSPORT AND COMMUNICATIONS OF KYRGYZ REPUBLIC**

## **CAREC Transport Corridor 1 (Bishkek-Torugart Road) Project 3**

**financed by the Asian Development Bank under Loan 2755-KGZ (SF)**

### **TERMS OF REFERENCE**

#### **A. BACKGROUND**

The Central Asia Regional Economic Cooperation (CAREC) Program has identified six regional road corridors. CAREC Transport Corridor 1 is an important regional route, connecting the People's Republic of China to the Kyrgyz Republic and Central Asia and onwards to Europe. Its Bishkek–Naryn–Torugart section is subject to rehabilitation under several investment projects financed by ADB. Project 1 was approved in 2008 and involved the rehabilitation of 39 km of CAREC corridor 1; Project 2 was approved in 2009 and included rehabilitation of 75 km on the same corridor. The main component in Project 3 is 60 km of two-lane Bishkek–Naryn–Torugart road (km 479–km 539) repaired, rehabilitated, or reconstructed to National Category III road standard with special structures to protect the environment, preserve the road structure, and reduce the number of vehicle crashes.

#### **B. OBJECTIVE OF THE ASSIGNMENT**

The second component included in project 3 is improved infrastructure management skills within the Ministry of Transport and Communications (MOTC) and other government agencies. This will be achieved through training, education, and mentoring from national and international consultants.

The MOTC requires the services of the consultant firm to improve the skills of its staff and staff of the Ministry of Finance, the Ministry of Economy, the State Agency on Environment and other road sector related government agencies in managing road infrastructure. Advanced skills are needed in technical aspects, environmental aspects and commercial aspects.

The consultant firm is required to undertake skills development in subjects such as contracting, FIDIC contract administration, new road construction, rehabilitation and maintenance technologies, international road design standards, quality assurance; budgeting, tariff setting, toll/tariff collection, road asset management, performance-based maintenance, environmental issues (development and recultivation of borrow pits, environmental mitigation measures).

The total estimated input of the firm is 40 person-months (20 international, 20 national) over a period of 9 months. The assignment will last from November 2015 to August 2016.

The QCBS method will be used to select the consulting firm based on Biodata Technical Proposal (BTP) with 80:20 quality-to-cost ratio.

The consultant will be expected to use lectures, interactive workshops, or other efficient delivery methods to enhance the staff skills. Key tasks include but are not limited to:

## **1. On-the-job training of MOTC staff**

The main objective of this task is to increase the Investment Projects Implementation Group's (IPIG) and the MOTC's capacity to manage road construction projects and contracts through on-the-job training. Key activities include but are not limited to:

- (i) on-the-job training and support for portfolio management, including road asset management, works planning, portfolio implementation monitoring, and reporting; the consultant will prepare an executive report providing an overview of projects, contracts, critical milestones, and risks
- (ii) assessing and advising on implementation and portfolio management strategies and processes;
- (iii) on-the-job training and support to procurement;
- (iv) on-the-job training and support to project management;
- (v) on-the-job training new road construction, rehabilitation and maintenance technologies and international road design standards,
- (vi) regularly evaluating the capacity of procurement and contract management staff and the quality of processes followed; and
- (vii) on-the-job training requirements for environmental protection during physical work (necessary documents as required by environmental law of the Kyrgyz Republic)

## **2. Enhancing Training and Research Capacity**

The objectives of this task are to help the MOTC set up, deliver, and maintain a regular training and retraining program for road engineers and mid-level managers. This should be coherent with the MOTC's human resources development program, but also would target non-MOTC staff. Key activities include but are not limited to:

- (i) preparing a capacity and training needs assessment for all units of the MOTC (priority: road engineers); regularly updating the assessment in areas of focus of the Project to monitor progress through on-the-job and formal training; proposing and fully defining training programs to be delivered on a recurrent basis to staff; and preparing a training program in accordance with the Project;
- (ii) preparing training and retraining programs offered to road engineers and managers; identifying skill gaps and interests for fee-based engineer trainings among private contractors and consultants, based on a survey; preparing a retraining road engineer program to be delivered regularly, preparing training program and development of syllabus and all training materials;
- (iii) proposing and assisting in the establishment of an institutional structure for training delivery; the consultant will seek to involve road sector professional associations and academic entities in training delivery; and
- (iv) preparing and supervising the preparation of complete sets of translated training materials, and delivering or supervising the delivery of the training modules (In addition to the engineer retraining module, key training include road construction, rehabilitation and maintenance management, road construction supervision and quality assurance, road works procurement and contract management, road asset management, transport planning, and project evaluation); requirements for the development and recultivation of borrow pits, procedures and a list of documents required by environmental laws of the Kyrgyz Republic); training should be mainly delivered to nationals of the Kyrgyz Republic

### 3. Develop local capacity for road sector technology transfer

The main objective of this task is to increase the Kyrgyz Republic's capacity to transfer and adapt international technologies in the road sector. The consultant will propose an institutional structure for capacity transfer, and define a medium-term road sector technology transfer and research plan. Key activities include:

- (i) assessing current priorities, current local capacity, and issues;
- (ii) identifying alternatives and recommending an implementation structure, particularly analyzing proposal on capacity building of the Design Institute Kyrgyzdortransproekt;
- (iii) consulting with the MOTC , the Design Institute Kyrgyzdortransproekt and other design institutes, technical universities, private consulting firms and other stakeholders on medium-term applied research needs; and
- (iv) preparing a medium-term road sector technology transfer and research plan.

### C. TERMS OF REFERENCE OF CONSULTING TEAM MEMBERS

Consultancy services are required for 9 months with input of 20 person-months of International expert and 20 person-months of National Experts. For all international consultants, fluency in both spoken and written English is expected. For all national consultants, fluency in both spoken and written Russian and Kyrgyz languages is expected, and knowledge of English is preferred.

<b>International</b>	<b>Months</b>
Team Leader, Capacity Building Expert	9
Transport Expert	4
Portfolio Specialist	3
Procurement Specialist	2
Road Maintenance Expert	2
Environmental Expert	2
IT Specialist	2
<b>Sub-total</b>	<b>20</b>
<b>National</b>	
Deputy Team Leader, Transport Expert	9
Portfolio Specialist	5
Procurement Specialist	3
Road Maintenance Expert	3
<b>Sub-total</b>	<b>20</b>
<b>Grand Total</b>	<b>40</b>

Key Experts (International)	Qualification	Tasks
<b>Team Leader (TL)</b> Capacity Building Expert, 9 MM	<p>The specialist will preferably have 12 years of experience in institutional strengthening and capacity development in road infrastructure projects.</p> <p>The specialist should have Master's degree or equivalent in civil engineering, transportation management or institutional strengthening.</p> <p>To be familiar with ADB's guild lines.</p> <p>Experience in KZG, or other countries with similar geographic conditions, is preferred for the international expert.</p>	<ul style="list-style-type: none"> <li>(i) prepare a training needs assessment and design a training program to strengthen the staff of the MOTC and other governmental and nongovernmental organizations;</li> <li>(ii) provide advice and guidance on the implementation of the training program which may include short and long-term courses;</li> <li>(iii) identify gaps faced by the MOTC and other government agencies;</li> <li>(iv) develop strategies or plans to meet their targets;</li> <li>(v) strengthen the capacity of the MOTC and other governmental and nongovernmental organizations and streamline their business processes to carry out results-based skills development work and other policy objectives in a sustainable manner;</li> <li>(vi) monitor consulting inputs to ensure quality and alignment with the MOTC's requirements. Regularly monitor and update consultant work plan ensuring achievement of deliverables to the MOTC's requirements. As TL the specialist will lead the development of the work plan and identify key deliverables to be generated by each position in this assignment. Work plan objectives and actions will need to be approved by the MOTC and ADB. Responsible for reporting;</li> <li>(vii) Proposing an institutional structure for a capacity transfer and define a medium-term road sector technology transfer and research plan. Key activities include: Assessing current priorities, current local capacity, and issues; Identifying alternatives and recommending an implementation structure, particularly analyzing proposal capacity building of the Design Institute Kyrgyzdortansproekt; consulting with the MOTC and the Design Institute Kyrgyzdortansproekt and other design</li> </ul>

		<p>institutes, technical universities, private consulting firms and other stakeholders on medium-term applied research needs; and preparing a medium-term road sector technology transfer and research plan;</p> <p>(viii) leading workshops and on-the-job training and participate;</p> <p>(ix) provide retraining together with the national transport specialist from all modules during his/her encouragement to enhance the MOTC's capacity building;</p> <p>(x) be present during the road sector conference in June-July 2015 in the Kyrgyz Republic and deliver a presentation on infrastructure skills development as required;</p> <p>(xi) under direction from the MOTC, perform tasks as required of a team leader for the successful implementation of the project;</p>
Transport Expert, 4 MM	<p>The specialist will preferably have 8 years of experience in institutional strengthening and capacity development in infrastructure projects.</p> <p>Has been familiar with ADB's procurement guild lines.</p> <p>The specialist should have Master's degree or equivalent in civil engineering or transportation.</p> <p>Experience in KZG, or other countries with similar geographic conditions, is</p>	<p>(i) preparing a training program, workshop and on-the-job-training for FIDIC contracts to the MOTC and other governmental and nongovernmental organizations;</p> <p>(ii) preparing a workshop and on job training for the assessment of the main traffic patterns and target users for toll/tariff collection with the objective of identifying the potential for public-private partnerships;</p> <p>(iii) proposing new technologies to the Design Institute Kyrgyzdortransproekt, including those for road construction, rehabilitation and maintenance;</p> <p>(iv) assistance to the procurement /portfolio specialist in workshops and on-the-job training;</p> <p>(v) introducing adapted international design standards in workshops and on-the-job training to the Design Institute Kyrgyzdortransproekt;</p> <p>(vi) assistance to the procurement and road maintenance specialist in preparing the workshop and on-the-job training for</p>

	preferred for the international expert.	performance based maintenance contracts
Portfolio Specialist, 3 MM	<p>The specialist will preferably have 8 years of experience of portfolio management in the road sector. Good knowledge and understanding of ADB's guidelines</p> <p>The specialist should have Bachelor's degree in social/economic development, public policy or equivalent fields, preferably with Master's Degree or equivalent</p> <p>Experience in KZG, or other countries with similar geographic conditions, is preferred for the international expert.</p>	<p>Improving the effectiveness of the portfolio management by training the MOTC staff in useful techniques and sharing his/her knowledge in leading practices in project implementation approach in workshops and in on-the-job training.</p> <p>For project planning:</p> <ul style="list-style-type: none"> <li>(i) review and identify effective approach to deal with achievement of the project objectives, analyze and recommend project implementation arrangements for better project impacts;</li> <li>(ii) appraising the project scope;</li> <li>(iii) Identifying deliverables and creating the work breakdown structure;</li> <li>(iv) establishing the activities needed to complete those deliverables and networking the activities in their logical sequence;</li> <li>(v) estimating the resource requirements for the activities; and estimating time and cost for activities.</li> </ul> <p>For project execution:</p> <ul style="list-style-type: none"> <li>(vi) assisting the MOTC in implementation of assigned programs/projects,</li> <li>(vii) coordinating people and resources required for programs/projects;</li> <li>(viii) ensuring quality and timeliness of deliverables;</li> <li>(ix) conducting the project reviews</li> <li>(x) preparing an executive report providing an overview of projects, contracts, critical milestones, and risks and updating at least on a quarterly basis;</li> <li>(xi) assessing and advising on implementation and portfolio management strategies and</li> </ul>

		<p>processes;</p> <p>For progress monitoring:</p> <p>(xii) monitor project achievements periodically to ensure projects/programs achieve the plan/projection targets;</p>
<p>Procurement Specialist, 2 MM</p>	<p>The specialist will preferably have 8 years of experience of procurement in the road sector. Good knowledge and understanding of ADB's guidelines on operational, procurement</p> <p>The specialist should have Bachelor's degree in social/economic development, public policy, civil engineering or equivalent fields, preferably with Master's Degree or equivalent</p> <p>Experience in KZG, or other countries with similar geographic conditions, is preferred for the international expert.</p>	<p>Improving the effectiveness of the procurement by training the MOTC staff in useful techniques and sharing his/her knowledge in leading practices in the following approaches in workshops and in on-job training.</p> <p>(i) developing a performance-based maintenance contract for the MOTC with assistance from the road maintenance expert,</p> <p>(ii) review in MOTC all procurement and contractual aspects of project and related civil works, goods, equipment and consultancy services in accordance with the ADB procurement guidelines and Guidelines on the Use of Consultants;</p> <p>(iii) Assist the MOTC in organizing the bidding, preparing bid evaluation reports (consulting services, goods and works) following ADB procurement requirements;</p> <p>(iv) suggestion for improvement of the procurement practices in the MOTC</p>
<p>Road Maintenance Expert, 2 MM</p>	<p>The specialist will preferably have 8 years of experience of road maintenance and with performance based maintenance contracts</p>	<p>Preparing of various training Materials</p> <p>(i) execute workshops and on-the-job training and preparing of various training materials to road engineer and road maintenance engineers for road maintenance management, road construction supervision and quality assurance for performance-</p>

	<p>The specialist should have Bachelor's degree in civil engineering or equivalent fields, preferably with Master's Degree or equivalent Experience in KZG, or other countries with similar geographic conditions, is preferred for the international expert</p>	<p>based maintenance contract;</p> <p>(ii) preparing, with help from the procurement specialist a standard performance-based maintenance contract for use by the MOTC;</p> <p>(iii) introducing new technologies for road construction, rehabilitation and maintenance;</p> <p>(iv) holding retaining modules to enhance the MOTC's capacity</p>
<p>Environmental Expert 2 MM</p>	<p>The specialist will preferably have 8 years of experience of environment. Good knowledge and understanding of ADB's Guidelines on Safeguards and Environment.</p> <p>The specialist shall have Bachelor's degree in environment, environmental management.</p> <p>Experience in KZG, or other countries with similar geographic conditions, is preferred for the international expert.</p>	<p>Preparation of various educational materials related to the environmental aspects during construction (Overview of Initial Environmental Assessment when preparing the project, development of Environmental Management Plan, list of documents prepared in the development and recultivation of borrow pits and dumps).</p>
<p>IT Specialist 2 MM</p>	<p>The specialist will preferably have 8 years of experience of IT sector. Good knowledge and understanding of information system for road construction and maintenance.</p>	<p>Preparation of various training materials</p> <p>(v) carry out seminars and trainings as well as preparation of various training materials for highway engineers and road maintenance engineers using modern information systems including those for road asset management;</p> <p>(vi) review of existing software packages in the road sector (construction, maintenance, road asset management etc.);</p>



	The specialist shall have Bachelor's degree in IT. Experience in KZG, or other countries with similar geographic conditions, is preferred for the international expert.	(vii) demonstration of such systems and review.
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Key Experts (National)	Qualification	Tasks
Transport Expert, Deputy Team Leader  9 MM	<p>The specialist will preferably have 8 years of experience in road infrastructure projects.</p> <p>Has been familiar with ADB's guild lines.</p> <p>The specialist should have Bachelor's degree or equivalent in civil engineering or transportation.</p>	<p>(i) assistance in preparing a training program, workshop and on-job training for FIDIC contracts to MOTC and other governmental and nongovernmental organizations;</p> <p>(ii) assistance in preparing a workshop and on job training for the assessment of the main traffic patterns and target users for toll/tariff collection with the objective of identifying the potential for public-private partnerships;</p> <p>(iii) proposing new technologies to the Design Institute Kyrgyzdorttransproekt,</p> <p>(iv) assistance to the procurement /portfolio specialists in workshops and on-the-job training;</p> <p>(v) assistance to the international transport specialist in introducing international adapted design standards in workshops and on-the-job training to the Design Institute Kyrgyzdorttransproekt;</p> <p>(vi) assistance to the procurement and road maintenance specialists in preparing the workshop and on-job training for performance based maintenance contracts</p> <p>(vii) responsible for retraining MOTC and Design Institute Kyrgyzdorttransproekt of all modules at regular intervals</p> <p>(viii) assistance to reporting</p>
Portfolio Specialist,	The specialist will preferably have 5	Improving the effectiveness of the portfolio management by training the MOTC staff in useful

5 MM	<p>years of experience of portfolio management. Good knowledge and understanding of ADB's guidelines</p> <p>The specialist should have Bachelor's degree in civil engineering, social/economic development or equivalent fields.</p>	<p>techniques and sharing his/her knowledge in leading practices in project implementation approach in workshops and in on-the-job training.</p> <p>Assistance to the International portfolio expert for project planning:</p> <ul style="list-style-type: none"> <li>(i) review and identify effective approach to deal with achievement of the project objectives, analyze and recommend project implementation arrangements for better project impacts;</li> <li>(ii) appraising the project scope;</li> <li>(iii) Identifying deliverables and creating the work breakdown structure;</li> <li>(iv) establishing the activities needed to complete those deliverables and networking the activities in their logical sequence;</li> <li>(v) estimating the resource requirements for the activities; and estimating time and cost for activities.</li> </ul> <p>Assistance to the International portfolio expert for project execution:</p> <ul style="list-style-type: none"> <li>(vi) Assisting the MOTC in implementation of assigned programs/projects,</li> <li>(vii) coordinating people and resources required for programs/projects;</li> <li>(viii) ensuring quality and timeliness of deliverables;</li> <li>(ix) assisting to the project reviews</li> <li>(x) assisting to the international portfolio specialist to preparing an executive report providing an overview of projects, contracts, critical milestones, and risks and updating at least on a quarterly basis;</li> <li>(xi) assessing and advising on implementation and portfolio management strategies and processes;</li> </ul> <p>Assistance to the International portfolio expert for progress monitoring:</p> <ul style="list-style-type: none"> <li>(xii) monitor project achievements periodically to</li> </ul>
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		<p>ensure projects/programs achieve the plan/projection targets;</p> <p>(xiii) responsible for retraining the MOTC staff in portfolio management</p>
<p>Procurement Specialist, 3 MM</p>	<p>The specialist will preferably have 5 years of experience of procurement in the road sector. Good knowledge and understanding of ADB's guidelines on operational, procurement</p> <p>The specialist should have Bachelor's degree in social/economic development, public policy, civil engineering or equivalent fields.</p>	<p>Improving the effectiveness of the procurement by training the MOTC staff in useful techniques and sharing his/her knowledge in leading practices in the following approaches in workshops and in on-job training.</p> <ul style="list-style-type: none"> <li>(i) assisting to developing a performance-based maintenance contract for the MOTC with assistance from the road maintenance experts,</li> <li>(ii) assisting the review in the MOTC all procurement and contractual aspects of project and related civil works, goods, equipment and consultancy services in accordance with the ADB procurement guidelines and Guidelines on the Use of Consultants;</li> <li>(iii) assisting the MOTC in organizing the bidding, preparing bid evaluation reports (consulting services, goods and works) following ADB procurement requirements;</li> <li>(iv) suggestion for improvement to the procurement practices in MOTC</li> <li>(v) responsible for retraining the MOTC staff in procurement</li> </ul>
<p>Road Maintenance Expert, 3 MM</p>	<p>The specialist will preferably have 5 years of experience of road maintenance</p> <p>The specialist should have Bachelor's degree in civil engineering or equivalent fields.</p>	<ul style="list-style-type: none"> <li>(i) assistance to workshops and on-the-job training and preparing of various training materials to road engineers and road maintenance engineers for road maintenance management, road construction supervision and quality assurance for performance-based maintenance contract;</li> <li>(ii) give input to the international road maintenance expert for the performance-based maintenance contract;</li> <li>(vi) responsible for retraining the MOTC staff in road maintenance</li> </ul>

## **D. EXPECTED OUTPUTS AND KEY-DELIVERIES OF SEMINARS, TRAINING AND WORKSHOPS**

### **(I) FIDIC**

**Overview of FIDIC, Multilateral Development Bank Harmonized Edition 2010 of the client's views:**

1. General Provisions
2. The Employer
3. The Engineer
4. The Contractor
5. Nominated Subcontractors
6. Staff and labor
7. Plant, Materials and Workmanship
8. Commencement, Delays and Suspension
9. Tests on Completion
10. Employer's Taking Over
11. Defects Liability
12. Measurement and Evaluation
13. Variations and Adjustments
14. Contract Price and Payment
15. Termination by Employer
16. Suspension and Termination by Contractor
17. Risk and Responsibility
18. Insurance
19. Force Majeure
20. Claims, Disputes and Arbitration

### **(II) FINANCING OF ROADS AND REQUIRED MAINTENANCE COSTS**

based on the Road Financing Study and the report of Commercialization of Road Administration, (egis international, July 2014) with the topics:

- Road Sector Financing
- Estimated Financing Needs
- Current Road Sector Revenue
- Road User Charges, Funding options
- Recommended Road User Charges

### **(III) PORTFOLIO MANAGEMENT STRATEGIES WITH MS-PROJECT (PPM)**

**Project planning, estimation of required budgets**

- Assisting the MOTC to the implementation of programs/projects
- Assisting the MOTC in maintaining the road asset management system;
- Assisting and developing a central database for cost estimation
- Project's expected cost
- Expected timeline for new road projects and maintenance
- Strategies for coordinating people and resources required for programs/projects
- Resources management
- Ensuring quality and timeliness of deliverables
- Conducting the project reviews and lessons learned for future projects

- Assessing and advising on implementation and portfolio management strategies and processes
- Lines of communication
- Preparing an executive report (Gantt), providing an overview of all projects, resources, contracts, critical milestones, and risks with a Project Management Software (MS-Project)

#### **Project execution, effective coordination of supervision, project monitoring**

- Encouragement of external supervision staff as a result of resources adjustment
- monitor project achievements periodically to ensure projects/programs achieve the plan/projection targets.
- identification of bottlenecks, effective countermeasures
- updated costs

### **(IV) BIDDING PROCEDURES AND EVALUATION REPORTS**

#### **Optimizing the Bidding Documents as a part of a Design and Built Contract:**

##### **Part I, Bidding Procedures**

- Section 1 - Instructions to Bidders
- Section 2 - Bid Data Sheet
- Section 3 - Evaluation and Qualification Criteria
- Section 4 - Bidding Forms
- (Section 5 - Eligible Countries)

##### **Part II,**

- Section 6 - Employer's Requirements
- Site Specific Environmental Management Plan (SSEMP)
- Responsibility of the Review of Preliminary Design by the Client, Design Review Criteria's

##### **Part III,**

- Conditions of Contract and Contract Forms
- (Section 7 - General Conditions of Contract)
- Section 8 - Particular Conditions of Contract
- Section 9 - Contract Forms

#### **Bid Evaluation Reports (BER)**

##### **(a) For Civil Works Contracts according to Guide on Bid Evaluation, ADB, October 2010:**

###### **Stage 1: Collection of Information**

- Basic Data
- Record of Bid Opening
- Preliminary Examination for Completeness of Bids

###### **Stage 2: Determination of Substantial Responsiveness of Bids**

- Preparation of Table of Bidders and Bid Prices
- Substantial Responsiveness to Commercial Terms and Conditions
- Substantial Responsiveness to Technical Requirements
- Preparation of Table of Substantive Responsiveness of Bids

###### **Stage 3: Detailed Evaluation of Bids**

- Determination of Number of Bids for Detailed Evaluation
- Detailed Evaluation
- Financial Adjustment of Bid Prices (Commercial Aspects), *detailed training needed*
- Financial Adjustment of Bid Prices (Technical Aspects), *detailed training needed*
- Detailed Evaluation of Bids for a Civil Works Contract
- Determination of the Lowest Evaluated Substantially Responsive Bid

###### **Preparation of Annexes**

**(b) For Consulting Companies according to Documents on Consulting Services, ADB, revised October 2013:**

Authoring of Narrative Evaluation Criteria (NEC)

Submission 1: Shortlisting of Consulting Firms and Request for Proposals

Submission 1: Evaluation of Expressions of Interest and Request for Proposals

Submission 1: Request for Proposal

Submission 2: Evaluation of Technical Proposals

Submission 3: Financial Proposals Evaluation and Overall Ranking of Proposals

Submission 4: Draft Negotiated Contract

And all related Templates:

Form EV 4.1 - Record of Attendance at the Opening of the Financial Proposals

Form EV 4.2 - Record of Technical Score and Proposal Prices at Opening of Financial Proposals

Form EV 5 - Summary Evaluation Sheet of Individual Firms' Financial Proposal

Form EV 6 - Summary Evaluation Sheet of Financial Proposals

Form EV 6.1 - Financial Proposal Price Adjustments, *detailed training needed*

Form EV 7 - Summary Proposal Ranking Sheet

**(V) PERFORMANCE BASED ROAD MAINTENANCE AND MANAGEMENT CONTRACTS (PBMMR)**

Introduction and Overview

Compliance Monitoring

Long-Term Asset Modeling

Changes Required for Implementing PBMMR

New cost estimates for equipment and fixed assets to the Road Management Department to determinate/calculate realistic fees

Developing of Draft Standard Bidding Documents for the Kyrgyz Republic for PBMMR

Training of supervision personnel in new technologies to meet the new performance maintenance standards (bitumen additives, electronic measurements, GPS etc.)

**(VI) COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS IN ROAD CONSTRUCTION.**

Compliance with environmental requirements during construction under local legislation;

List of main documents, principled approach to the preparation of documentation for the development and rehabilitation of borrow pits;

Other issues related to environmental aspects during construction.

**(VII) MODERN ICT APPLICATIONS IN THE ROAD SECTOR**

Introduction and Overview of the present level of ICT use in Kyrgyz road sector

Introduction of modern ICT application in the road sector, especially for

- Road asset management system (RAMS; GIS; Databases)
- Data collection technologies, surveying technologies
- Document management systems
- Quality assurance applications
- Quantity monitoring and reporting systems
- Contract management systems (with multiple contracts and financiers, see MS Project above)

The training should cover modern principles together with some real life practical examples as well as sector best practice review

## **(VIII) INNOVATION IN THE ROAD SECTOR**

Introduction to new innovations that could be applicable to Kyrgyz environment, such as

- International road design standards
- New paving methods and materials
- New low cost maintenance methods and practices for low trafficked roads
- Weather monitoring and winter maintenance methods
- Road user feedback collection systems
- Alternative methods for traffic data collection
- New project delivery mechanisms

## **E. REPORTING REQUIREMENTS**

It is expected that detailed work program will be completed by the end of the 2nd week, during the remaining eight and half months the consultant firm will execute the implementation of the training programs, workshops and retraining.

<b>Tasks</b>	<b>Output</b>	<b>Timeline</b>
Inception and Implementation report	Consultants mobilization, Established methodology and implementation, conclusion and measures, training and work program	14 days after commencement of works
6 Progress reports	Status of implementation	Starting 2 months after commencement of works
Draft final report	Summarizing all consultants output, training and recommendations	Draft final report one month before the contract completion date.
Final report		Completion date
<p>Not limited to other reports/documents, training programs and training materials as requested before.</p> <p>Draft reports should be submitted in soft copy at least one week before, to incorporate comments from ADB and the MOTC. Reports should be submitted in hard copy, three copies each to ADB and the MOTC.</p> <p>All reports/documents, training programs and training materials should be authored in English and Russian language.</p>		