

# Project Administration Manual

Project Number: 48401-007

Loan and/or Grant Number(s): L3432; G0496

July 2017

## Kyrgyz Republic: Proposed CAREC Corridors 1 and 3 Connector Road Project

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Annex 1: Procurement Plan

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Annex 3: Environmental Management Plan

### **Project Administration Manual Purpose and Process**

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with Government and Asian Development Bank (ADB) policies and procedures. The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The Ministry of Transport and Roads (MOTR) of Kyrgyz Republic—executing agency (EA), and the Investment Projects Implementation Group (IPIG)—implementing agency are wholly responsible for the implementation of ADB-financed projects, as agreed jointly between the borrower and ADB, and in accordance with Government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by MOTR and IPIG of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

During Loan Negotiations, the borrower and ADB shall agree to the PAM and ensure consistency with the Financing Agreement. Such agreement shall be reflected in the minutes of the Loan Negotiations. In the event of any discrepancy or contradiction between the PAM and the Financing Agreement, the provisions of the Loan/Grant Agreement shall prevail.

After ADB Board approval of the project's report and recommendations of the President changes in implementation arrangements are subject to agreement and approval pursuant to relevant Government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval they will be subsequently incorporated in the PAM.

## **Abbreviations**

|      |   |   |
|------|---|---|
| ADB  | = | Asian Development Bank                      |
| CSC  | = | construction supervision consultant         |
| EA   | = | executing agency                            |
| EMP  | = | environmental management plan               |
| ICB  | = | international competitive bidding           |
| IPIG | = | Investment Projects Implementation Group    |
| LARP | = | land acquisition and resettlement plan      |
| MOTR | = | Ministry of Transport and Roads             |
| PAM  | = | project administration manual               |
| SEMP | = | site-specific environmental management plan |
| SOE  | = | statement of expenditure                    |
| SPS  | = | Safeguard Policy Statement                  |
| TOR  | = | terms of reference                          |

## I. PROJECT DESCRIPTION

1. **Project's location, description, and rationale.** The project will connect two major CAREC regional corridors by rehabilitating a crucial connector road, part of the North–South Alternate Corridor, which is a priority in the National Sustainable Development Strategy.<sup>1</sup> It will (i) improve connectivity and mobility, (ii) link economically underprivileged regions with economic hubs, and (iii) strengthen institutional capacity by introducing and implementing a road asset management system (RAMS) and a project implementation unit administrative manual and procedure.<sup>2</sup>

2. **Impact and Outcome.** The impact will be enhanced regional and national connectivity. The outcome will be improved efficiency and safer movement of goods and people.

3. **Outputs.** The outputs are as follows:

- (i) rehabilitated road from Epkin village to Bashkugandy village 70 km long (distance market [Km] 89–Km 159) that incorporates specific features for road safety and climate change adaptation; and
- (ii) strengthened institutional capacity, including consulting services for detailed design,<sup>3</sup> construction supervision, project management, project auditing, safeguards support, the preparation and implementation of the RAMS, and a review of pilot performance-based maintenance contracting.

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<sup>1</sup> Government of the Kyrgyz Republic. 2013. *National Council for Sustainable Development of the Kyrgyz Republic, National Sustainable Development Strategy for the Kyrgyz Republic, 2013–2017*. Bishkek.

<sup>2</sup> The Asian Development Bank (ADB) provided project preparatory technical assistance for Preparing the CAREC Corridors 1 and 3 Connector Road Project (TA 8887-KGZ).

<sup>3</sup> ADB approved a \$3 million Asian Development Fund (ADF) grant as a PDA for the CAREC Corridors 1 and 3 Connector Road Project on 2 June 2015 to finance detailed design.

## II. IMPLEMENTATION PLANS

### A. Project Readiness Activities

| Indicative Activities                         | Month 1<br>(Jul 2016) | Month 2<br>(Aug 2016) | Month 3<br>(Sep 2016) | Month 4<br>(Oct 2016) | Month 5<br>(Nov 2016) | Month 6<br>(Dec 2016) | Month 11<br>(May 2017) | Responsible Party |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|-------------------|
| Advance contracting actions                   | X                     |                       |                       |                       |                       |                       |                        | ADB and MOTR      |
| Establish project implementation arrangements | X                     |                       | X                     |                       |                       |                       |                        | MOTR              |
| ADB Board approval                            |                       |                       | X                     |                       |                       |                       |                        | ADB               |
| Loan/Grant signing                            |                       |                       |                       | X                     |                       |                       |                        | ADB and MOF       |
| Government legal opinion provided             |                       |                       |                       |                       |                       | X                     |                        | MOTR              |
| Government budgeting                          |                       |                       |                       |                       |                       | X                     |                        | MOTR              |
| Grant/Loan effectiveness                      |                       |                       |                       |                       |                       |                       | X                      | ADB/MOTR          |

ADB = Asian Development Bank, RFP = request for proposal, MOF = Ministry of Finance, MOTR = Ministry of Transport and Roads.  
Source: Asian Development Bank.

## B. Overall Project Implementation Plan<sup>4</sup>

4. The project implementation plan key implementation activities must be updated annually and submitted to ADB with contract award and disbursement projections for the succeeding year/s.

| Activity   | Start     | Finish    | 2016 |     |     |     |     |     |     |     |     |     |     |     | 2017 |     |     |     |     |     |    |    | 2018 |    |    |    | 2019 |    |    |    | 2020 |    |    |    | 2021 |    |    |    | 2022 |    |  |  |
|--|-----------|-----------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|----|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|--|--|
|  |           |           | Jan  | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan  | Feb | Mar | Apr | May | Jun | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 |  |  |
| Financing Approval                               |           |           |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| ADB Management's Approval                        |           |           |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Loan Negotiations                                |           | II Aug 16 |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Loan Approval by ADB's Board                     |           | IV Sep 16 |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Loan Signing                                     |           | IV Oct 16 |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Loan Effectivity                                 |           | IV Dec 16 |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Procurement Activities                           |           |           |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Preparation of Detailed Design and Bid Documents | I Feb 16  | I Oct 16  |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Procurement of Works                             | I May 16  | I Apr 17  |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Posting of General Procurement Notice            |           | I Sept 16 |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Preparation of Bid Documents                     |           | I May 16  |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| ADB Approval of Bid Documents                    |           | I Sept 16 |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Bid Preparation                                  |           | I Nov 16  |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Evaluation of Proposals by MOTC                  |           | I Feb 17  |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| ADB Approval of Evaluation                       |           | I Mar 17  |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Contract Negotiations & ADB Approval             |           | I Apr 17  |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Recruitment of Supervision Consultant            | I Aug 16  | I Apr 17  |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Posting of Consultant Recruitment Notice         |           | I Aug 16  |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Preparation of RFP                               |           | I Sept 16 |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Evaluation of Proposals by MOTC                  |           | I Dec 16  |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Contract Negotiations & ADB Approval             |           | I Mar 17  |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Construction                                     |           |           |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Mobilization of Contractor                       | I May 17  | I July 20 |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Works Supervision                                | I May 17  | I July 20 |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Project Completion                               |           | I July 20 |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Defects Liability Period                         | I July 20 | I July 21 |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |
| Loan Closing                                     |           | I Jan 22  |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |  |  |

ADB = Asian Development Bank, RFP = request for proposal, MOTR = Ministry of Transport and Roads.

Source: Asian Development Bank.

<sup>4</sup> To be updated after award of civil works contract.

### III. PROJECT MANAGEMENT ARRANGEMENTS

#### A. Project Implementation Organizations – Roles and Responsibilities

| Project implementation Organizations                                     | Management Roles and Responsibilities   |
|--|---|
| I. Executing Agency: Ministry of Transport and Roads (MOTR)              | <ul style="list-style-type: none"> <li>➤ Focal point for communication with ADB on project related matters, and signatory to contract agreements for civil works, consulting services, withdrawal applications, and audit reports</li> <li>➤ Ensure timely completion of project</li> <li>➤ Ensure that Investment Projects Implementation Group is fully staffed and functional during the entire period of implementation</li> <li>➤ Supervision of all consultancy and works contracts (including approving contract variations, suspending, and terminating contracts)</li> <li>➤ Ensure compliance with financing covenants, ADB's guidelines, procedures, and policies</li> </ul>   |
| II. Implementing Agency: Investment Projects Implementation Group (IPIG) | <ul style="list-style-type: none"> <li>➤ Pre-construction phase:               <ul style="list-style-type: none"> <li>○ advise MOTR on procurement of goods, works, consulting and audit services</li> <li>○ design capacity development program</li> <li>○ review and verify documents submitted by contractors and consultants</li> <li>○ obtain ADB approvals</li> </ul> </li> <li>➤ Construction phase:               <ul style="list-style-type: none"> <li>○ monitor and evaluate project activities and outputs</li> <li>○ administer contracts and ensure minimal variations and deviations from original prices and schedules</li> <li>○ report Project's progress to MOTR and ADB</li> <li>○ assist ADB missions</li> </ul> </li> <li>➤ consult with the public and disclose project information, in consultation with ADB</li> </ul> |
| III. Asian Development Bank (ADB)  | <ul style="list-style-type: none"> <li>➤ Assist MOTR in implementing the Project by:               <ul style="list-style-type: none"> <li>○ reviewing and facilitating approval of project implementation and procurement documents submitted by EA</li> <li>○ disclosing project information to the public</li> <li>○ fielding review missions</li> </ul> </li> <li>➤ Facilitate knowledge sharing</li> </ul>  |
| IV. Ministry of Finance (MOF)  | <ul style="list-style-type: none"> <li>➤ Facilitate negotiation, signing, and execution of the financing agreement</li> <li>➤ Expedite project implementation and minimize cost</li> </ul>  |



by:

- Timely allocating and making available counterpart funds
  - approving payment to contractors, goods, and service providers
  - monitor project progress ensuring that corrective actions are taken to prevent significant variations and deviations from original schedules and budgets
- 

## **B. Key Persons Involved in Implementation**

### **Executing Agency**

Ministry of Transport and Roads    Minister of Transport and Roads  
Telephone: +996 312 314313  
Fax: +996 312 312811  
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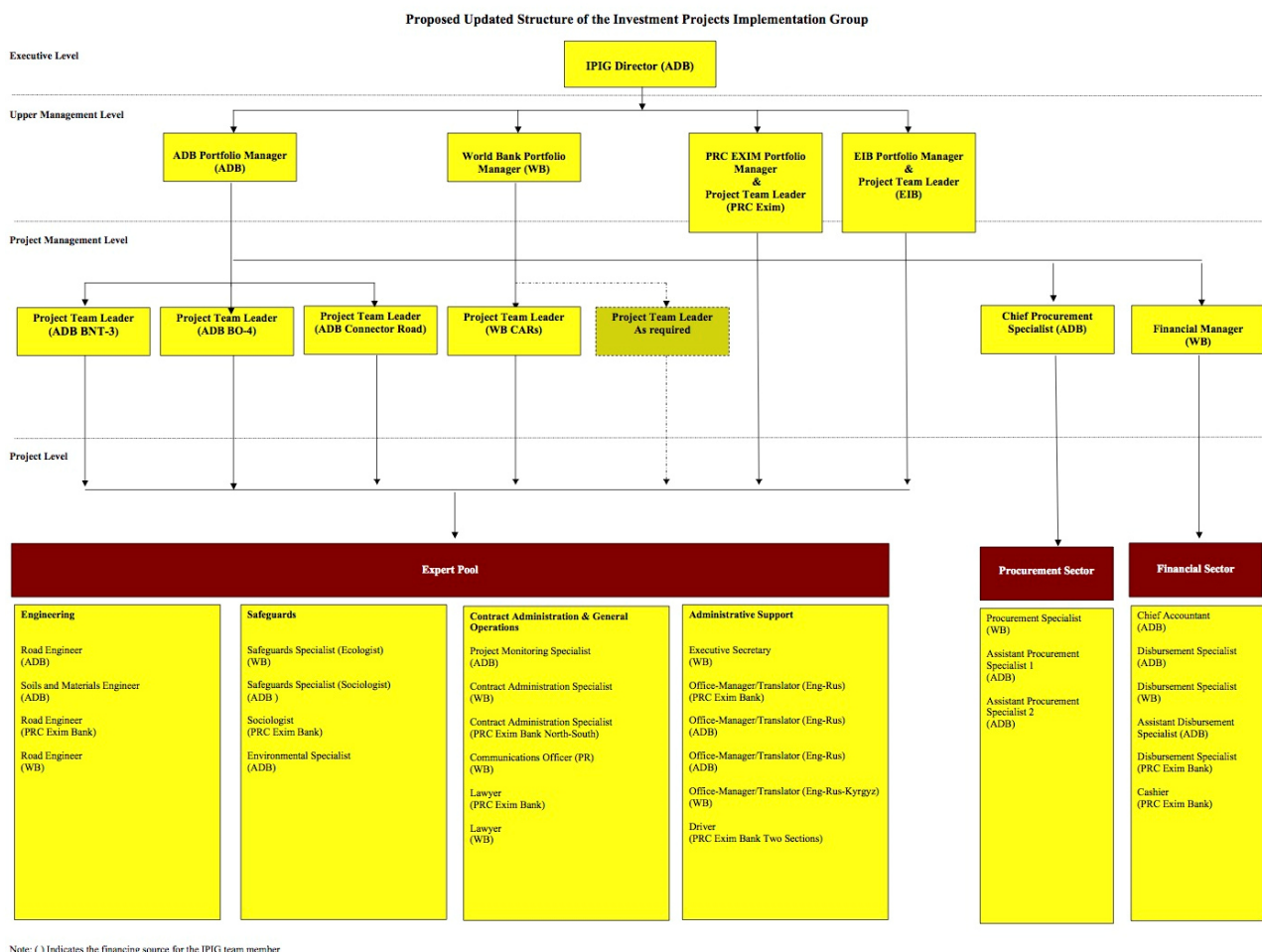
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## C. Project Organization Structure<sup>5</sup>

5. The following organization chart shows the reporting lines between key organizations involved in project implementation. The proposed revised organization structure below is expected to be implemented upon project effectiveness in January 2017 or earlier.



6. IPIG realignment was proposed as part of the project implementation capacity assessment undertaken by the project preparatory technical assistance consultant. Once the Ministry Order on the proposed realignment is issued, MOTR will endorse the realignment covering revised terms of references, staff performance indicators, operations procedures, staff development plan, communication plan, systems and procedures for filing and documentation, and quality management. The revised team composition and revised operating procedures shall be made effective at project effectiveness stage.

7. Once implemented, portfolio managers shall be delegated to each funding agency/donor to ensure that project objectives and goals are realized as agreed between MOTR/Government and the funding agency/donor. The portfolio managers will act as deputies of the IPIG director

<sup>5</sup> Reorganization of IPIG has been initiated by the MOTR and the final organization structure is still pending confirmation from the MOTR. In due course, this section of the PAM will be updated.

for each donor agency. They shall receive instructions from, and report directly to IPIG director and maintain effective channels of communication with all stakeholders, including donors. The project team leaders are responsible for the day-to-day activities of project implementation and are responsible for the management of project staff and their respective outputs. Technical project staff shall manage and administer the technical aspects of the project implementation process. They shall establish and maintain project implementation schedules, manage and administer the implementation of contracts, including monitoring and evaluating progress and performances of consultants and contractors. Technical project staff shall receive instructions from and report directly to the project team leader.

8. Depending on the size and nature of projects, other qualified experts and support staff may be required and shall be recruited/mobilized as needed. The necessary authority from MOTR shall be delegated to IPIG staff to enable them to effectively carry out their duties and responsibilities. MOTR must ensure that IPIG and its individual members are held accountable for implementing the project in a manner consistent with the guidelines and systems and procedures of MOTR and funding agencies/donors. Within the project team, certain positions could be shared, whilst other positions can still be dedicated full time to specific projects. In addition to designated portfolio managers, IPIG may engage a pool of local experts/consultants for areas needing specific expertise, particularly in social analysis, environmental protection, and other technical fields according to the needs of different projects.

#### **IV. COSTS AND FINANCING**

9. The Project is estimated to cost \$114.35 million to be financed by ADB and the Government, including taxes and duties.

10. The government has requested ADB to provide a grant and a loan totaling \$95.11 million from ADB's Special Funds resources (tentatively \$58.39 million Asian Development Fund Loans and \$36.72 million Asian Development Fund Grants) to help finance the project. The loan will have a 32-year term, including a grace period of 8 years, and interest rate of 1.0% per annum during the grace period and 1.5% per annum thereafter and such other terms and conditions set forth in the financing agreements. In addition, \$3.0 million of PDA grant approved in 2015 is included in the project financing.

11. The government will provide counterpart funding of \$19.24 million to cover taxes and duties related to all civil works, goods, consulting services, and internal government review approval.

12. The Project is expected to be completed by July 2021.

### A. Detailed Cost Estimates by Expenditure Category (\$ million)

| Item      |  |   |  | Foreign<br>Currency | Local Currency | Total Cost    | % of Total Base Cost |
|-----------|--|---|--|---------------------|----------------|---------------|----------------------|
| <b>A.</b> | <b>Base Cost</b>                             |   |  |                     |                |               |                      |
|           | 1  | Civil Works   |  | 60.89               | 26.77          | 87.67         | 87.73%               |
|           | 2  | Consulting Services   |  |                     |                |               |                      |
|           | a.   | Construction Supervision                                    |  | 2.54                | 1.08           | 3.62          | 3.62%                |
|           | b.   | Detailed Design   |  | 2.00                | 0.89           | 2.89          | 2.89%                |
|           | c.   | PBM Consultant  |  | 0.23                | 0.16           | 0.39          | 0.39%                |
|           | d.   | RAMs Implementation   |  | 1.62                | 1.05           | 2.68          | 2.68%                |
|           | 3  | Project Management  |  | 0.00                | 2.16           | 2.16          | 2.16%                |
|           | 4  | Land Acquisition and Resettlement Cost                      |  | 0.00                | 0.10           | 0.10          | 0.10%                |
|           | 5  | Project Expertise and Approval (State Architectural Agency) |  | 0.00                | 0.44           | 0.44          | 0.44%                |
|           |  | <b>Subtotal A</b>   |  | <b>67.28</b>        | <b>32.65</b>   | <b>99.93</b>  | <b>100.00%</b>       |
| <b>B</b>  | <b>Contingencies</b>                         |   |  |                     |                |               |                      |
|           | 1  | Physical Contingencies                                      |  | 3.25                | 2.46           | 5.71          | 5.71%                |
|           | 2  | Price Contingencies   |  | 2.60                | 1.96           | 4.56          | 4.56%                |
|           | 3  | Contingencies for Consulting Services                       |  | 1.25                | 0.83           | 2.08          | 2.08%                |
|           | 4  | Contingencies for Resettlement                              |  | 0.00                | 0.03           | 0.03          | 0.03%                |
|           |  | <b>Subtotal B</b>   |  | <b>7.10</b>         | <b>5.28</b>    | <b>12.37</b>  | <b>12.38%</b>        |
| <b>C</b>  | <b>Financial Charges During Construction</b> |   |  | <b>0.00</b>         | <b>2.04</b>    | <b>2.04</b>   | <b>2.04%</b>         |
|           |  | <b>Total Project Cost (A+B+C)</b>                           |  | <b>74.38</b>        | <b>39.97</b>   | <b>114.35</b> |                      |

## B. Allocation and Withdrawal of Loan/Grant Proceeds

| ALLOCATION AND WITHDRAWAL BY LOAN PROCEEDS  |  |   |   |
|---|--|---|---|
|   |  |   |   |
| Number                                      | Item   | Total Amount Allocated for ADB Financing (SDR) Category (\$million) | Basis for Withdrawal from the Loan Account  |
| 1   | Works-Project Project                          | 36.75   | 58%   |
| 2   | Interest Charge                                | 1.46  | 100%  |
| 3   | Unallocated                                    | 3.69  |   |
|   | Total  | 41.90   |   |
|   |  |   |   |
|   |  |   |   |
| ALLOCATION AND WITHDRAWAL BY GRANT PROCEEDS |  |   |   |
|   |  |   |   |
| Number                                      | Item   | Total Amount Allocated for ADB Financing Category (\$million)       | Basis for Withdrawal from the Grant Account |
| 1   | Works  | 20.68   | 24%   |
| 2   | Consulting Services                            | 5.60  | 90%   |
| 3   | PDA**  | 3.00  | 100%*                                       |
| 4   | Project Management (Goods and Recurring Costs) | 2.16  | 100%  |
| 5   | Resettlement Expenses                          | 0.10  | 100%  |
| 6   | Unallocated                                    | 5.18  |   |
|   | Total  | 36.72   |   |

\* Exclusive of taxes and duties imposed within the territory of the Beneficiary.

\* The amount of the PDA disbursed from Grant No. PDA 6002-KGZ(SF) as of the Effective Date of this Financing Agreement will be cancelled from this Category on the same date" in line with the draft Financing Agreement.

### C. Detailed Cost Estimates by Financier (\$ million)

|           |  |   |  | ADB Loan     |                | ADB Grant    |               | Government   |               |               |
|-----------|--|---|--|--------------|----------------|--------------|---------------|--------------|---------------|---------------|
| Item      |  |   |  | Amount       | % of Cost      | Amount       | % of Cost     | Amount       | % of Cost     | Total Cost    |
| <b>A.</b> | <b>Base Cost</b>                             |   |  |              |                |              |               |              |               |               |
|           | 1  | Civil Works   |  | 51.21        | 58.41%         | 20.68        | 23.59%        | 15.78        | 18.00%        | 87.67         |
|           | 2  | Consulting Services   |  |              |                |              |               |              |               |               |
|           | a.   | Construction Supervision                                    |  | 0.00         | 0.00%          | 3.26         | 90.00%        | 0.36         | 10.00%        | 3.62          |
|           | b.   | Detailed Design   |  | 0.00         | 0.00%          | 2.60         | 90.00%        | 0.29         | 10.00%        | 2.89          |
|           | c.   | PBM Consultant  |  | 0.00         | 0.00%          | 0.34         | 90.00%        | 0.05         | 10.00%        | 0.39          |
|           | d.   | RAMs Implementation   |  | 0.00         | 0.00%          | 2.41         | 90.00%        | 0.27         | 10.00%        | 2.68          |
|           | 3  | Project Management  |  | 0.00         | 0.00%          | 2.16         | 100.00%       | 0.00         | 0.00%         | 2.16          |
|           | 4  | Land Acquisition and Resettlement Cost                      |  | 0.00         | 0.00%          | 0.10         | 100.00%       | 0.00         | 0.00%         | 0.10          |
|           | 5  | Project Expertise and Approval (State Architectural Agency) |  | 0.00         | 0.00%          | 0.00         | 0.00%         | 0.44         | 100.00%       | 0.44          |
|           |  | <b>Subtotal A</b>   |  | <b>51.21</b> | <b>51.24%</b>  | <b>31.54</b> | <b>31.56%</b> | <b>17.19</b> | <b>17.20%</b> | <b>99.94</b>  |
| <b>B</b>  | <b>Contingencies</b>                         |   |  |              |                |              |               |              |               |               |
|           | 1  | Physical Contingencies                                      |  | 2.87         | 50.35%         | 1.81         | 31.65%        | 1.03         | 18.00%        | 5.71          |
|           | 2  | Price Contingencies   |  | 2.26         | 49.64%         | 1.48         | 32.36%        | 0.82         | 18.00%        | 4.56          |
|           | 3  | Contingencies for Consulting Services                       |  | 0.00         | 0.00%          | 1.87         | 90.00%        | 0.21         | 10.00%        | 2.08          |
|           | 4  | Contingencies for Resettlement                              |  | 0.00         | 0.00%          | 0.03         | 100.00%       | 0.00         | 0.00%         | 0.03          |
|           |  | <b>Subtotal B</b>   |  | <b>5.14</b>  | <b>41.52%</b>  | <b>5.18</b>  | <b>41.86%</b> | <b>2.06</b>  | <b>16.61%</b> | <b>12.37</b>  |
| <b>C</b>  | <b>Financial Charges During Construction</b> |   |  | <b>2.04</b>  | <b>100.00%</b> | <b>0.00</b>  | <b>0.00%</b>  | <b>0.00</b>  | <b>0.00%</b>  | <b>2.04</b>   |
|           |  | <b>Total Project Cost (A+B+C)</b>                           |  | <b>58.39</b> | <b>51.06%</b>  | <b>36.72</b> | <b>32.11%</b> | <b>19.24</b> | <b>16.83%</b> | <b>114.35</b> |

Note: There is no land acquisition in the project. There is no taxes and duties in paying compensations.

In the Country Partnership Strategy: Kyrgyz Republic, 2013–2017 stated that ADB can finance taxes and duties.  
<http://www.adb.org/sites/default/files/linked-documents/cps-kgz-2013-2017-csa.pdf>

### D. Detailed Cost Estimates by Outputs/Components (\$ million)

|           |  |   |  | Output 1      |                | Output 2     |               |               |
|-----------|--|---|--|---------------|----------------|--------------|---------------|---------------|
| Item      |  |   |  | Amount        | % of Cost      | Amount       | % of Cost     | Total Cost    |
| <b>A.</b> | <b>Base Cost</b>                             |   |  |               |                |              |               |               |
|           | 1  | Civil Works   |  | 87.67         | 100.00%        | 0.00         | 0.00%         | 87.67         |
|           | 2  | Consulting Services   |  |               |                |              |               |               |
|           | a.   | Construction Supervision                                    |  | 0             | 0.00%          | 3.62         | 100.00%       | 3.62          |
|           | b.   | Detailed Design   |  | 0             | 0.00%          | 2.89         | 100.00%       | 2.89          |
|           | c.   | PBM Consultant  |  | 0             | 0.00%          | 0.39         | 100.00%       | 0.39          |
|           | d.   | RAMs Implementation   |  | 0             | 0.00%          | 2.68         | 100.00%       | 2.68          |
|           | 3  | Project Management  |  | 0             | 0.00%          | 2.16         | 100.00%       | 2.16          |
|           | 4  | Land Acquisition and Resettlement Cost                      |  | 0.10          | 100.00%        | 0.00         | 0.00%         | 0.10          |
|           | 5  | Project Expertise and Approval (State Architectural Agency) |  | 0.44          | 100.00%        | 0.00         | 0.00%         | 0.44          |
|           |  | <b>Subtotal A</b>   |  | <b>88.21</b>  | <b>88.26%</b>  | <b>11.73</b> | <b>11.74%</b> | <b>99.93</b>  |
| <b>B</b>  | <b>Contingencies</b>                         |   |  |               |                |              |               |               |
|           | 1  | Physical Contingencies                                      |  | 5.71          | 100.00%        | 0.00         | 0.00%         | 5.71          |
|           | 2  | Price Contingencies   |  | 4.56          | 100.00%        | 0.00         | 0.00%         | 4.56          |
|           | 3  | Contingencies for Consulting Services                       |  | 0.00          | 0.00%          | 2.08         | 100.00%       | 2.08          |
|           | 4  | Contingencies for Resettlement                              |  | 0.03          | 100.00%        | 0.00         | 0.00%         | 0.03          |
|           |  | <b>Subtotal B</b>   |  | <b>10.30</b>  | <b>83.23%</b>  | <b>2.08</b>  | <b>16.77%</b> | <b>12.37</b>  |
| <b>C</b>  | <b>Financial Charges During Construction</b> |   |  | <b>2.04</b>   | <b>100.00%</b> | <b>0.00</b>  | <b>0.00%</b>  | <b>2.04</b>   |
|           |  | <b>Total Project Cost (A+B+C)</b>                           |  | <b>100.55</b> | <b>87.93%</b>  | <b>13.80</b> | <b>12.07%</b> | <b>114.35</b> |

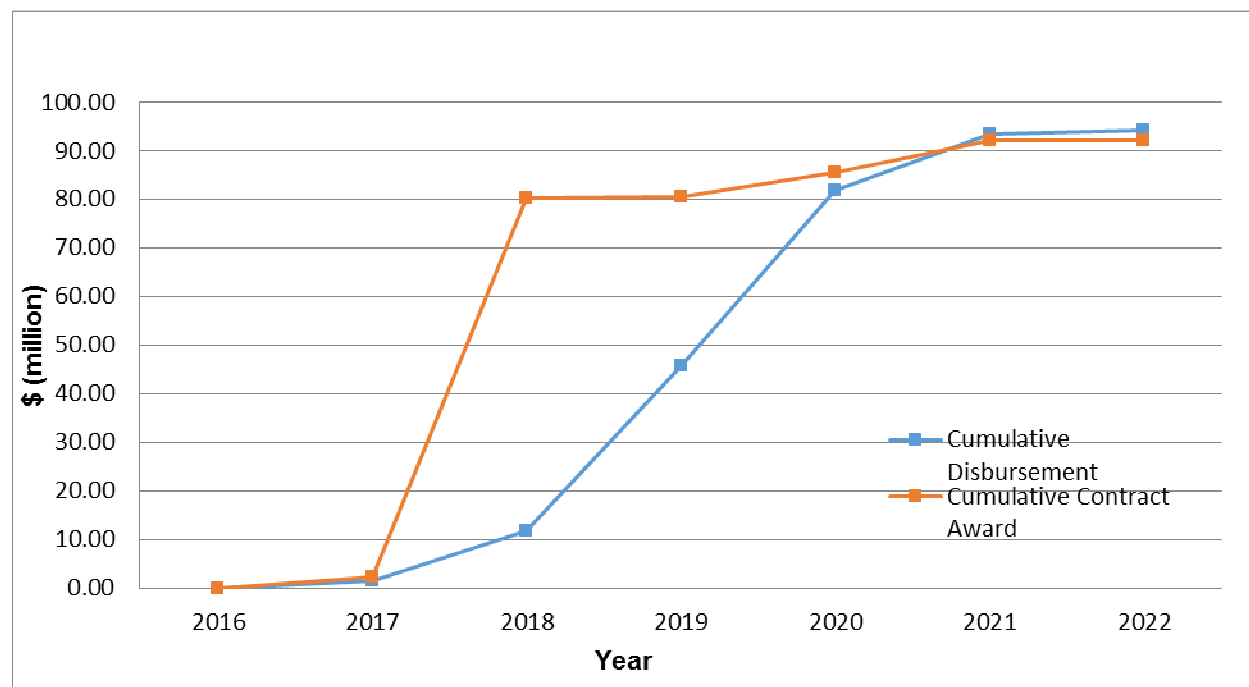
### E. Detailed Cost Estimates by Year (\$ million)

|           |  |   |  | Output 1      |                | Output 2     |               |               |
|-----------|--|---|--|---------------|----------------|--------------|---------------|---------------|
| Item      |  |   |  | Amount        | % of Cost      | Amount       | % of Cost     | Total Cost    |
| <b>A.</b> | <b>Base Cost</b>                             |   |  |               |                |              |               |               |
|           | 1  | Civil Works   |  | 87.67         | 100.00%        | 0.00         | 0.00%         | 87.67         |
|           | 2  | Consulting Services   |  |               |                |              |               |               |
|           | a.   | Construction Supervision                                    |  | 0             | 0.00%          | 3.62         | 100.00%       | 3.62          |
|           | b.   | Detailed Design   |  | 0             | 0.00%          | 2.89         | 100.00%       | 2.89          |
|           | c.   | PBM Consultant  |  | 0             | 0.00%          | 0.39         | 100.00%       | 0.39          |
|           | d.   | RAMs Implementation   |  | 0             | 0.00%          | 2.68         | 100.00%       | 2.68          |
|           | 3  | Project Management  |  | 0             | 0.00%          | 2.16         | 100.00%       | 2.16          |
|           | 4  | Land Acquisition and Resettlement Cost                      |  | 0.10          | 100.00%        | 0.00         | 0.00%         | 0.10          |
|           | 5  | Project Expertise and Approval (State Architectural Agency) |  | 0.44          | 100.00%        | 0.00         | 0.00%         | 0.44          |
|           |  | <b>Subtotal A</b>   |  | <b>88.21</b>  | <b>88.26%</b>  | <b>11.73</b> | <b>11.74%</b> | <b>99.93</b>  |
| <b>B</b>  | <b>Contingencies</b>                         |   |  |               |                |              |               |               |
|           | 1  | Physical Contingencies                                      |  | 5.71          | 100.00%        | 0.00         | 0.00%         | 5.71          |
|           | 2  | Price Contingencies   |  | 4.56          | 100.00%        | 0.00         | 0.00%         | 4.56          |
|           | 3  | Contingencies for Consulting Services                       |  | 0.00          | 0.00%          | 2.08         | 100.00%       | 2.08          |
|           | 4  | Contingencies for Resettlement                              |  | 0.03          | 100.00%        | 0.00         | 0.00%         | 0.03          |
|           |  | <b>Subtotal B</b>   |  | <b>10.30</b>  | <b>83.23%</b>  | <b>2.08</b>  | <b>16.77%</b> | <b>12.37</b>  |
| <b>C</b>  | <b>Financial Charges During Construction</b> |   |  | <b>2.04</b>   | <b>100.00%</b> | <b>0.00</b>  | <b>0.00%</b>  | <b>2.04</b>   |
|           |  | <b>Total Project Cost (A+B+C)</b>                           |  | <b>100.55</b> | <b>87.93%</b>  | <b>13.80</b> | <b>12.07%</b> | <b>114.35</b> |



## F. Contract and Disbursement S-curve

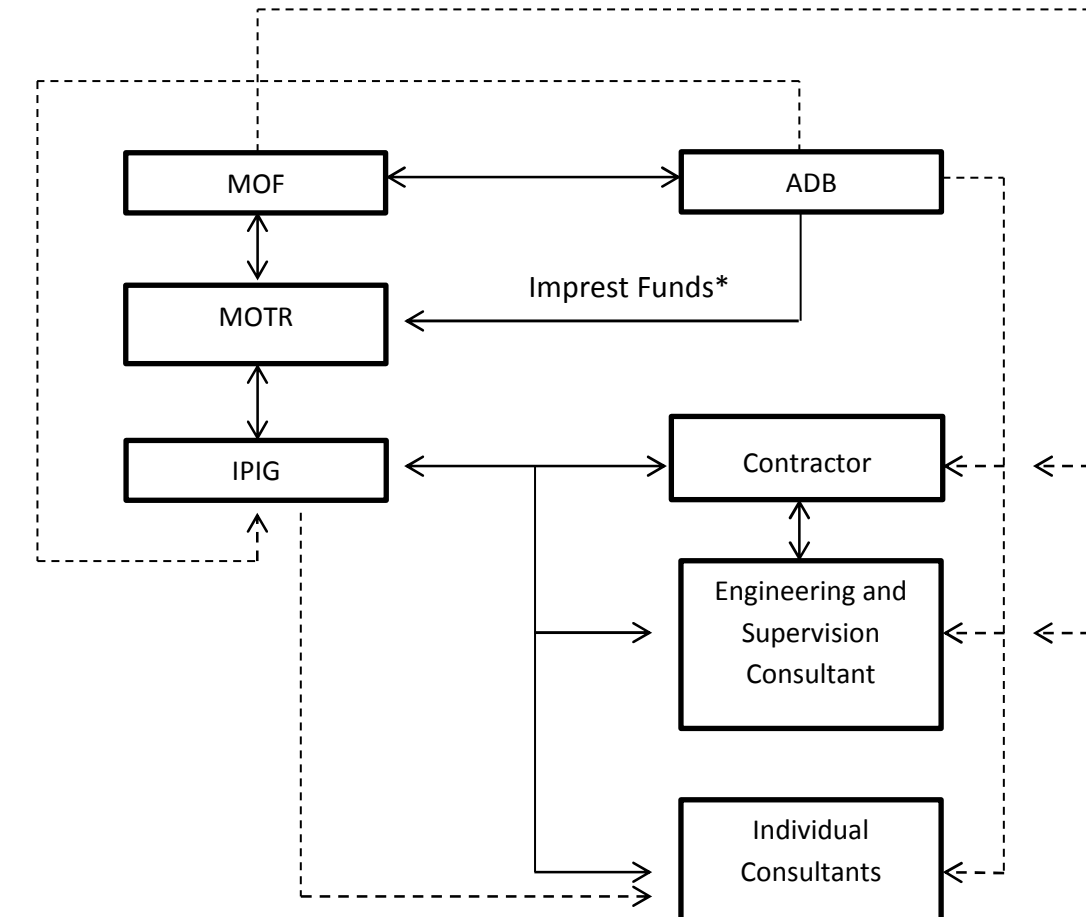
13. The following graph shows the anticipated annual contract awards and disbursements over the life of the project, based on initial projections made.



| Contract Awards (in USD millions) |      |      |       |      |       | Disbursements (in USD millions) |       |       |       |       |
|-----------------------------------|------|------|-------|------|-------|---------------------------------|-------|-------|-------|-------|
|                                   | Q1   | Q2   | Q3    | Q4   | Total | Q1                              | Q2    | Q3    | Q4    | Total |
| 2016                              | 0.00 | 0.00 | 0.00  | 0.00 | 0.00  | 0.00                            | 0.00  | 0.00  | 0.00  | 0.00  |
| 2017                              | 0.00 | 2.34 | 0.00  | 0.00 | 2.34  | 0.00                            | 1.23  | 0.10  | 0.10  | 1.43  |
| 2018                              | 0.00 | 0.00 | 77.70 | 0.10 | 77.80 | 0.00                            | 0.00  | 0.00  | 10.38 | 10.38 |
| 2019                              | 0.10 | 0.10 | 0.10  | 0.10 | 0.40  | 3.00                            | 9.00  | 11.00 | 11.00 | 34.00 |
| 2020                              | 0.10 | 0.10 | 0.10  | 4.70 | 5.00  | 3.00                            | 11.00 | 12.40 | 9.50  | 35.90 |
| 2021                              | 0.10 | 1.10 | 2.10  | 3.33 | 6.63  | 3.00                            | 8.00  | 0.30  | 0.40  | 11.70 |
| 2022                              | 0.00 | 0.00 | 0.00  | 0.00 | 0.00  | 0.77                            | 0.00  | 0.00  | 0.00  | 0.77  |
| Total Contract Award              |      |      |       |      | 92.17 | Total Disbursement              |       |       |       | 94.17 |

## G. Fund Flow Diagram

14. The following diagram shows the flow of funds from ADB and Borrower during project implementation.



————— Communication/submission

- - - - - Fund flows

\* Imprest Funds to be established by  
MOTR

ADB= Asian Development Bank, MOF=Ministry of Finance,  
MOTR= Ministry of Transport and Roads  
IPIG= Investment Projects Implementation Group  
Source: MOTR

## V. FINANCIAL MANAGEMENT

### A. Financial Management Assessment

15. The financial management assessment was undertaken in 2016 in accordance with ADB's Guidelines for the Financial Management and Analysis of Projects (2005) and Financial Due Diligence: a Methodology Note (2009). The pre-mitigation risk rating assigned to the project is moderate. This included an assessment of the financial management capacity including fund-flow arrangements, staffing, accounting and financial reporting systems, financial information systems, internal controls, and internal and external auditing arrangements. Key risk areas include:

| <b>Risk</b>   | <b>Risk Assessment *</b> | <b>Risk Mitigation Measures</b>   |
|---|--------------------------|---|
| <b>Government Financing</b>   |                          |   |
| Government's failure to provide counterpart fund on time during project implementation  | M                        | Government assurances to include counterpart funds in the annual budget   |
| <b>Project Implementation</b>   |                          |   |
| Technical designs and specifications are not appropriate in terms of contracting capabilities, availability of materials, and site conditions | N                        | Conventional engineering designs have been adopted. During implementation, the MOTR/IPIG together with international supervision consultant will ensure that all civil works comply with engineering design parameters and quality standards for road construction. |
| Delays in the procurement process   | M                        | Presence of a procurement specialist will be ensured at all times. Training in ADB procurement guidelines and project management will be provided.  |
| <b>Institutional Arrangements</b>   |                          |   |
| Ambiguities in the roles and responsibilities of IPIG and MOTR  | M                        | Roles and responsibilities of IPIG and MOTR will be clearly defined in the revised IPIG structure, by virtue of the Ministry Order, and shall be reflected in the PAM.  |
| <b>Project Costs</b>  |                          |   |
| Budget of some project elements are underestimated due to price escalation  | M                        | Provision of contingencies to cover price fluctuations. Budget to be revised where necessary. The FM staff will monitor actual expenditure against budget.  |
| <b>Financial Management</b>   |                          |   |
| Break-down of the accounting system   | N                        | Frequent system back-ups.   |
| Delays in submitting audit reports  | N                        | The audit will be carried out on  |

|   |   |  |
|---|---|--|
|   |   | TORs with submission schedule of audit reports agreed with the ADB.  |
| Weak vetting controls over payments to contractors and consultants                                    | N | Strict adherence to the guidelines and procedures outlined in the PAM and Operational Manual   |
| Weakness in internal control systems  | M | In addition to strict adherence to guidelines and procedure, the strengthened PIU internal administrative process will alleviate some financial internal control systems issues.   |
| <b>Safeguards</b>   |   |  |
| Delays in updating and implementing resettlement plans will delay the award of civil works contracts. | M | International and national resettlement specialists are recruited through the Detailed Design Consultant to assist MOTR/IPIG with timely updating of resettlement plans, and support capacity building for IPIG safeguard specialists. |
| * H = High, S = Substantial, M = Moderate, N = Negligible or Low                                      |   |  |

16. **Implementing Agency.** IPIG within MOTR is responsible for overall project financial management, i.e., planning, accounting, disbursement, replenishment, reporting, maintaining control of the accounting information, and ensuring its proper registration in the accounting system. The efficiency of the project financial management is backed up by (i) strong experience of the accounting team within IPIG, (ii) computerized accounting system, (iii) adequate accounting policies and procedures, (iv) efficient budgeting arrangements, (v) good external auditing arrangements, and (vi) efficient funds flow arrangements. IPIG has already implemented several ADB and other donor funded projects and has proven project implementation and financial management capacities. However, realignment of the current IPIG structure and review of administrative processes are necessary in order to enhance the capacity of IPIG.

17. The following section reflects the project's specific financial management arrangements.

## **B. Disbursement**

18. The Loan and Grant proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time),<sup>6</sup> and agreed detailed arrangements between the Government and ADB. According to ADB's Safeguard Policy Statement (SPS),<sup>7</sup> ADB funds may not be applied to any activity as described on the Prohibited Investment Activities List as listed under Appendix 5 of the SPS. Online training for project staff on disbursement policies and procedures is available at: [http://wpqr4.adb.org/disbursement\\_elearning](http://wpqr4.adb.org/disbursement_elearning). Project staff are encouraged to avail of this training to help ensure efficient disbursement and fiduciary control."

<sup>6</sup> Available at: <http://www.adb.org/documents/loan-disbursement-handbook>

<sup>7</sup> Available at: <http://www.adb.org/Documents/Policies/Safeguards/Safeguard-Policy-Statement-June2009.pdf>

19. **Imprest Accounts.** MOTR will establish imprest accounts under its name upon project effectiveness at a commercial bank acceptable to ADB.<sup>8</sup> The outstanding advance to the imprest account(s) will not at any time exceed the estimated ADB financed expenditures for the next 6 months to be paid through the imprest accounts. The currency to be used for the imprest accounts shall be the US dollars (USD). The imprest accounts are to be used exclusively for ADB's share of eligible expenditures. The MOTR/IPIG is accountable and responsible for proper use of the imprest accounts. The imprest account shall be established, managed, and liquidated in accordance with ADB's Loan Disbursement Handbook and arrangements between the Government and ADB. MOTR may request for initial and additional advances to the imprest accounts based on 6 months estimated expenditures. The request should be accompanied by an Estimate of Expenditure Sheet<sup>9</sup> indicating estimated amounts for the first six (6) months of project implementation. For every liquidation and replenishment request of the imprest accounts, the borrower will furnish to ADB (i) Statement of Account (Bank Statement) where the imprest accounts are maintained, and (ii) the Imprest Account Reconciliation Statement reconciling the above-mentioned bank statement against the EA's records.<sup>10</sup> Separate imprest accounts should be established and maintained by funding source.

20. **Statement of Expenditures (SOE).** The SOE procedure may be used for reimbursement of eligible expenditures or liquidation of advances to the imprest account. Any withdrawal applications submitted to ADB for reimbursement and liquidation of individual payments in excess of the SOE ceiling should be supported by full documentation. Supporting documents and records for the expenditures claimed under the SOE should be maintained and made readily available for review by ADB during missions, and whenever ADB requests for supporting documents on a random basis, for audit purposes.<sup>11</sup> The minimum value per withdrawal application is set in accordance with the Loan Disbursement Handbook. Individual payments below this amount should be paid by the MOTR/IPIG and subsequently claimed from ADB (i) through reimbursement; or (ii) from the imprest accounts, unless otherwise accepted by ADB.

### C. Accounting

21. MOTR/IPIG's Finance Division will be responsible for (i) preparing disbursement projections, (ii) requesting budgetary allocations for counterpart funds from MOF, (iii) collecting supporting documents, and (iv) preparing and sending withdrawal applications to ADB. Before the submission of the first withdrawal application, the MOF (borrower) should submit to ADB evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the borrower, together with the authenticated specimen signatures of each authorized person.

22. MOTR/IPIG will maintain separate project accounts and records by funding source for all expenditures incurred on the Project. Project accounts will follow international accounting principles and practices (including the procedures outlined in the manual prepared for IPIG by

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<sup>8</sup> The bank charges incurred in the operation of the imprest account may be financed from the loan and grant proceeds.

<sup>9</sup> Available in Appendix 29 of the *Loan Disbursement Handbook*.

<sup>10</sup> Follow the format provided in Appendix 30 of the *Loan Disbursement Handbook*.

<sup>11</sup> Checklist for SOE procedures and formats are available at:

[http://www.adb.org/documents/handbooks/loan\\_disbursement/chap-09.pdf](http://www.adb.org/documents/handbooks/loan_disbursement/chap-09.pdf)

[http://www.adb.org/documents/handbooks/loan\\_disbursement/SOE-Contracts-100-Below.xls](http://www.adb.org/documents/handbooks/loan_disbursement/SOE-Contracts-100-Below.xls)

[http://www.adb.org/documents/handbooks/loan\\_disbursement/SOE-Contracts-Over-100.xls](http://www.adb.org/documents/handbooks/loan_disbursement/SOE-Contracts-Over-100.xls)

[http://www.adb.org/documents/handbooks/loan\\_disbursement/SOE-Operating-Costs.xls](http://www.adb.org/documents/handbooks/loan_disbursement/SOE-Operating-Costs.xls)

[http://www.adb.org/documents/handbooks/loan\\_disbursement/SOE-Free-Format.xls](http://www.adb.org/documents/handbooks/loan_disbursement/SOE-Free-Format.xls)

the World Bank) and those prescribed under the Government's accounting laws and regulations.

#### **D. Auditing**

23. The Government will (a) maintain separate accounts and records for the Project, including separate accounts and records for the Loan and Grant; (b) prepare annual financial statements for the Project in accordance with financial reporting standards acceptable to ADB; (c) have such financial statements audited annually by independent auditors whose qualifications, experience and terms of reference are acceptable to ADB, in accordance with auditing standards acceptable to ADB; (d) as part of each such audit, have the auditors prepare a report, which includes the auditors' opinion(s) on the financial statements and the use of the Loan and Grant proceeds, and a management letter (which sets out the deficiencies in the internal control of the Project that were identified in the course of the audit, if any); and (e) furnish to ADB, no later than 6 months after the end of each related fiscal year, copies of such audited financial statements, audit report and management letter, all in the English language, and such other information concerning these documents and the audit thereof as ADB shall from time to time reasonably request. The EA have been informed of ADB's policy on delayed submission of audit reports.<sup>12</sup> ADB reserves the right to verify the project's financial accounts and confirm that ADB's financing share is used in accordance with ADB's policies and procedures.

24. ADB shall disclose the annual audited financial statements for the Project and the opinion of the auditors on the financial statements within 14 days of the date of ADB's confirmation of their acceptability by posting them on ADB's website.

### **VI. PROCUREMENT AND CONSULTING SERVICES**

#### **A. Advance Contracting**

25. Advance action for procurement of works and services will be undertaken in line with ADB's Procurement Guidelines (2015)<sup>13</sup> and ADB's Guidelines on the Use of Consultants (2013),<sup>14</sup> as amended from time to time. ADB's approval must be sought before any invitation for bids is issued and request for expressions of interest is sought. MOTR will carry out recruitment of consultants under advance contracting arrangement. Approval of advance contracting does not commit ADB to finance the Project.

#### **B. Procurement of Goods, Works, and Consulting Services**

26. International competitive bidding procedures will be used for civil works contracts estimated to cost \$3 million or more. Shopping will be used for contracts for procurement of works and equipment worth less than \$100,000. For any national competitive bidding, ADB and the Government will review the public procurement laws of the central and state governments to

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<sup>12</sup> When audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (i) the audit documents are overdue; and (ii) if they are not received within the next six months, requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters will not be processed.

<sup>13</sup> Available at: <http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf>

<sup>14</sup> Available at: <http://www.adb.org/Documents/Guidelines/Consulting/Guidelines-Consultants.pdf>

ensure consistency with ADB's *Procurement Guidelines* before the start of any procurement using national competitive bidding.

27. All consultants (including nongovernment organizations, if any) will be recruited following ADB's *Guidelines on the Use of Consultants*.<sup>15</sup> Consulting firms will be engaged using the quality- and cost-based selection method with a standard quality-cost ratio of 90:10.

### **C. Procurement Plan**

28. All procurement of goods and works will be undertaken in accordance with ADB's Procurement Guidelines. An 18-month procurement plan indicating threshold and review procedures, goods, works, and consulting service contract packages and national competitive bidding guidelines is in Annex 1. The Procurement Plan has to be updated regularly by IPIG whenever there is a change in any of the packages and whenever a contract is awarded and completed.

### **D. Consultants' Terms of Reference**

29. The TOR for the construction supervision consultant (CSC), road asset management system, and PBM are given in the relevant sections of the TOR in Annex 2.

## **VII. SAFEGUARDS**

### **A. Environment**

30. The project is category B for environment. IPIG will be responsible for environmental management plan (EMP) implementation, see Annex 3 for EMP. IPIG will ensure that EMP will be adequately included in bidding documents all environmental mitigation measures will be included in construction contracts. Monitoring of environmental quality and the implementation of mitigation measures will be performed by the CSC with sufficient TORs and staff-time for this task. The monitoring results will be included in the project quarterly progress reports and semi-annual environmental reports.

31. The cost for implementing EMP will be financed by the loan, specifically the costs of mitigation measures will be included in the construction contracts, and the cost for environmental monitoring will be included in the consulting service of the CSC. Mitigation measures and a monitoring plan have been developed and incorporated into the EMP. Under the guidance of CSC, the contractor will have to submit site-specific Environmental Management Plans (SEMP) for the following prior to commencing operations: (i) SEMP in the sensitive sites such as main residential areas, cultural historic sites including cemeteries, riverbanks or other waterways; (ii) layout of the work camp with sewage management and waste management plan; (iii) sitting and description asphalt and crashing plants, equipment maintenance and storage facilities; (iv) spoil soil management plan; (v) borrow site management including restoration; and (vi) method statement for bridge reconstruction works. The SEMPs shall be endorsed by the construction supervision consultant before submission to IPIG for approval.

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<sup>15</sup> Checklists for actions required to contract consultants by method available in e-Handbook on Project Implementation at: <http://www.adb.org/documents/handbooks/project-implementation/>

32. IPIG will promptly inform ADB of the occurrence of any risks or impacts, with detailed description of the event and proposed corrective action plan if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the initial environmental examination. IPIG will report any actual or potential breach of compliance with the measures and requirements set forth in the EMP promptly after becoming aware of the breach.

33. **Safeguards (environment) monitoring.** CSC will submit quarterly project progress report reflecting environmental safeguard compliance. CSC will assist IPIG in compiling and submitting semiannual monitoring reports during project construction within one month after each reporting period. Environmental monitoring reports will be disclosed at ADB website and to local authorities.

## **B. Land Acquisition and Resettlement and Indigenous Peoples**

34. The project is category B for involuntary resettlement safeguards. A Land Acquisition and Resettlement Plan (LARP) has been prepared. The LARP was prepared consistent with the requirements of the ADB's SPS (2009). The LARP will be updated following completion of final detailed road design. During project preparation stage, all the requirements of the SPS were followed and accordingly all requirements during LARP implementation. During the LARP update, consultation and disclosure activities will continue to be undertaken with the affected households and concerned groups. Professional valuation shall be carried out to determine the current market value of land and non-land assets. The final LARP shall be disclosed to affected persons and households and will be submitted to ADB for review and concurrence. LARP implementation activities shall not commence until the final resettlement plan has been agreed between ADB and MOTR.

35. MOTR shall ensure that no civil work contract (for a particular road section) is awarded until the LARP is approved by the ADB, and no notice to proceed is given to contractor(s) until the LARP is implemented. MOTR, through IPIG, will be responsible for the LARP implementation, including ensuring that grievance redress mechanism is operating appropriately.

36. **Safeguards (resettlement) monitoring).** MOTR will prepare semiannual monitoring reports that describe the progress of the implementation of resettlement activities and any compliance issues and corrective actions. These reports will closely follow the involuntary resettlement monitoring indicators agreed at the time of LARP approval. MOTR will, on completion of LARP implementation, submit a compliance report to ADB, to verify that all LAR has been completely implemented in accordance with ADB's SPS 2009.

## **VIII. GENDER AND SOCIAL DIMENSIONS**

37. The Project is classified as SGE (Some Gender Elements), and will indirectly address social and gender issues such as limited access and mobility associated with poor road connectivity, women's limited participation in the transport sector, and road safety issues. Improved roads will increase people's access to services, and open new economic opportunities for both women and men. As increased travel and trade could have the latent result of increased human and drug trafficking and spread of sexually transmitted diseases, the Government has put in place measures for increased border and internal security monitoring. The MOTR, involving a social support organization, will implement a community targeted



awareness raising campaign on trafficking and sexually transmitted diseases, as well as on road safety.

38. People around the project areas will be able to find employment in physical works and ancillary services during construction. As there will be substantial demand for employment opportunities arising from this project, there will also be careful monitoring throughout implementation to ensure that core labor standards (CLS) are respected. (The US State Department warned that the Kyrgyz Republic is a source and transit country for men, women, and children subjected to forced labor, and for women and children subjected to sex trafficking. Within the Kyrgyz Republic itself, the construction industry is mentioned as one of those where forced labor can be an issue). The civil works contracts will require that contractors (i) comply with the Kyrgyz Republic's applicable labor laws and related international treaty obligations, and not employ child labor; (ii) provide safe working conditions and separate sanitation facilities for male and female workers; (iii) provide equal wages to male and female workers for work of equal value; (iv) provide employment opportunities for women; (v) carry out road safety, HIV/AIDS, illicit drugs, and human trafficking prevention and awareness programs in workers' campsites; and (vi) construct toilets along the project road.

39. Within MOTR, a specific provision in the works and service contracts of its employees will ensure: (i) compliance with national labor standards, applicable laws and regulations, and incorporate applicable workplace occupational safety norms; (ii) non-discrimination in employment including providing equal pay for men and women for work done that are of equal value; (iii) non-employment of child labor in construction; (iv) non-use of forced or compulsory labor; (v) freedom of association; and (vi) to the extent possible, employment of local poor and disadvantaged persons for project construction purposes, provided that the requirements for job and efficiency are adequately met.

40. MOTR will coordinate with the Ministry of Internal Affairs and other relevant agencies to implement adequate surveillance measures in the project road to prevent human and narcotic trafficking, and other unlawful activities. Through the contractor and Engineer, MOTR will disseminate information on prevention of sexually transmitted diseases and to workers employed in road construction and communities living adjacent to the Project road.

41. Community consultation meetings and workshops will be conducted regularly and ensure women's participation, as well as representation from other sectors - the poor, rural population, persons with disabilities, and the youth.

42. The social summary matrix below details the social and gender measures the Project will take to address relevant concerns.

## Social Summary Matrix for Project Detailed Design, Construction, and Operation Phases

| Social Measure  | Timing/Frequency  | Responsibility   | Description  |
|---|---|--|--|
| <b>Detailed Design Phase</b>  |   |  |  |
| <i>Consultation and Participation</i>   |   |  |  |
| <p><u>Design Review Workshops</u><br/>Instigated by MOTR/EA, road section-associated rayons/ayil okmotus will identify local administration participants, including experts/key informants involved during PPTA. Rayons/ayil okmotus will also identify civil society participants including representatives of interested NGOs/CBOs and local youth, women's, and elder's organizations.</p> <p>Workshop agenda will include review of preliminary designs with specific attention to their provisions for:<br/>-road safety and protection of drivers, passengers, pedestrians, and livestock;<br/>-corridor rehabilitation and enhancement, including sidewalks/ footpaths, taxi/bus stops and stations, street lighting, designation of safe sites for seasonal vending and roadside services, and drinking water and toilet facilities, lay-bys, pull-offs, rest areas for comfort of travellers, etc., and<br/>-provisions for local employment in project construction</p> | Once early in detailed design process for each project road section, with follow-on activities to be determined as necessary. | EA will enable. PIU will convene and coordinate with and Detailed Design Consultant (DDC) support. DDC will prepare reports of each design review to be incorporated in road section design reports. | <p>DDC TOR amended, if necessary, to incorporate consultation and participation component.</p> <p>EA/PIU/DDC will facilitate and entertain project area comments on preliminary road section designs, soliciting recommendations, if any, from local administrations, interested, experts and civil society representatives.</p> |
| <p><u>Tripartite Commission</u><br/>Informed by design workshop participation and experience, MOTR/EA will establish/designate a representative body including project decision-makers, local administrations, civil society, and other stakeholders and interested parties for each road section to stand in readiness for activation at commencement of project construction.</p>   | Prior to completion of detailed design activities,  | EA will enable. PIU and DDC will support.  | The commission/body will monitor and advise upon project construction and operation activities, fostering consensus among project stakeholders, enhancing social acceptability, and promoting harmonious contractor-community relations  |
| <i>Social Design Feature</i>  |   |  |  |
| <p><u>Validation/Refinement of PPTA Preliminary Designs and Social Measures</u><br/>Informed by design review workshops, the DDC will validate and refine as</p>  | During completion of final detailed project designs   | DDC in consultation with EA/PIU  | The DDC will report upon design review workshop results and recommendations and how they have been addressed in final  |

|  | <b>Social Measure</b>   | <b>Timing/Frequency</b>   | <b>Responsibility</b>   | <b>Description</b>  |
|--|---|---|---|---|
|  | necessary PPTA preliminary designs and associated social provisions associated with road safety, road corridor rehabilitation and enhancement, and local employment in project construction.  |   |   | detailed designs.   |
|  | <b>Construction Phase</b>   |   |   |   |
|  | <i>Consultation and Participation</i>   |   |   |   |
|  | <u>Public Consultations</u><br>Tripartite body will advertise and host public consultations wherein local populations may receive information on project construction activities and bring concerns, if any, to the attention of project authorities  | Once, prior to commencement of construction and bi-annually thereafter during construction phase.                                     | EA will convene. PIU will conduct. CSC and construction contractor (CC) will assist with support of contracted local NGO/CBO/CSO. EA/PIU, with CSC support, will report results of public consultations in project progress reports to ADB. |   |
|  | <i>Social Mitigation Feature</i>  |   |   |   |
|  | <u>Social Support Organization</u><br>Via social summary matrix provisions incorporated in construction contracts, the contractor will engage a locally experienced NGO/CBO/CSO or consortium to support consultation and participation activities and design and delivery of specified social mitigations addressing HIV/AIDS, human trafficking, and road safety risks. | Following contractor mobilization and prior to first public consultation.   | Subject to CSC review and PIU approval, the construction contractor will refine scope of work, identify, and contract a competent civil society organization  | Specifications of this feature to be included in bidding documents and incorporated in construction contracts and budgets.  |
|  | <u>Labor Issues and Standards</u><br>Includes attention to maximizing gender-balanced local employment in project construction and adherence to national and core labor standards in construction activities  | In conjunction with regular CSC monitoring and reporting of construction progress and issues.   | Contractor responsible for compliance, CSC responsible for monitoring and identification of corrective measures, as necessary, and EA/PIU responsible for oversight.  | Covenants in the project financing agreements and specifications in civil works contracts will mandate compliance with core labor standards, including prevention of child labor and gender discrimination. |
|  | <u>Road Safety</u><br>Anticipating project operation, the CSO support organization will deliver road safety awareness programs to parents and children in road section schools,   | During road construction period project-sponsored school-hosted events in each road section primary/secondary school,                 | Subject to CSC review and PIU approval, program will be designed and delivered by contractor-engaged CSO support organization in consultation/partnership with school officials and women's groups.   | Road safety programs will be delivered in road sections 2, 3, and 5, comprising 23 PIA villages.  |
|  | <u>HIV/AIDS/Communicable Disease</u><br>Addressing risks associated with construction camps and anticipating project operation and increased traffic transiting project area, the CSO support organization will deliver   | During road construction period, project-sponsored local administration-hosted events in each road section-associated ayil okmotu and | Subject to CSC review and PIU approval, program will be designed and delivered by contractor-engaged CSO support organization in consultation/partnership with ayil okmotu officials and women's councils and with                          | CSO support organization will assure participation of women's council and other representatives of ayil okmotu constituent villages. Programs will be   |

|  | <b>Social Measure</b>  | <b>Timing/Frequency</b>  | <b>Responsibility</b>  | <b>Description</b>   |
|--|--|--|--|--|
|  | HIV/AIDS awareness and prevention programs to mitigate risks to construction workforce and local population.   | construction labor camp.   | relevant HIV/AIDS/STI service, prevention, testing, treatment, and support agencies.   | delivered in road sections 1, 2, 3, and 5, comprising 12 PIA ayil okmotus.   |
|  | <u>Human Trafficking</u><br>Anticipating risks associated with project operation and increased traffic transiting project area, the CSO support organization will deliver human trafficking awareness and prevention programs to mitigate risks to local population. | During road construction period, project-sponsored local administration-hosted events in each road section-associated ayil okmotu. | Subject to CSC review and PIU approval, program will be designed and delivered by contractor-engaged CSO support organization in consultation/partnership with ayil okmotu officials and youth and women's councils. | CSO support organization will assure participation of women's council, youth, and other representatives of ayil okmotu constituent villages. Programs will be delivered in road sections 1, 2, 3, and 5, comprising 12 PIA ayil okmotus. |
|  | <i>Monitoring</i>  |  |  |  |
|  | <u>Local Employment/Adherence to Core Labor Standards</u><br>Local employment in project construction activities will be monitored over the course of the construction period.   | Monthly in contractor and CSC progress reports.  | Contractors will report local employment in monthly reports.<br>CSC will oversee compliance and assess progress toward targets in periodic reporting. EA/PIU will report results in progress reports to ADB.         | Monitoring will track employment in project construction with attention to national origin, gender, position /skill level, and % local of entire contractor workforce.   |
|  | <u>Poverty</u><br>Poverty levels and trends in project-associated oblasts, rayons, and ayil okmotus will be monitored over the course of the construction period   | Annually over the construction period and at conclusion of CSC contract/final reporting.   | EA/PIU, with CSC support. Monitoring results will be reported in project progress reports to ADB.  | Upon the PSA-established baseline, and employing NSC and ayil okmotu figures   |
|  | <u>Local Road Safety</u><br>For each project road section, incidence of road-associated accidents and injuries will be monitored over the course of the construction period.   | Annually over the construction period and at conclusion of CSC contract/final reporting,   | EA/PIU, with CSC support. Monitoring results will be reported in project progress reports to ADB.  | Monitoring will include accident/injury incidence by age, gender, residence, and type.   |
|  | <u>Road-associated Enterprises</u><br>Establishment of new roadside enterprises associated with project construction or anticipating project operation will be monitored over the course of the construction period.   | Annually over the construction period and at conclusion of CSC contract/final reporting.   | EA/PIU, with CSC support. Monitoring results will be reported in project progress reports to ADB.  | Monitoring will include attention to formal/informal sector, enterprise type, and gender-disaggregated data on associated employment.  |
|  | <b>Operation Phase</b>   |  |  |  |
|  | <i>Consultation and Participation</i>  |  |  |  |
|  | <u>Public Consultations</u><br>Tripartite body will advertise and host public consultations wherein local populations may receive information on project operations and bring concerns, if any, to the attention of project authorities/MOTR.                        | At post-construction commissioning and annually in each road section until expiration of contractor's liability period.            | EA will convene. PIU will conduct. EA/PIU will report results of public consultations in project progress reports to ADB.  | PIU will ensure gender-balanced and representative participation of road section-associated village communities.   |
|  | <i>Monitoring</i>  |  |  |  |
|  | <u>Local Employment</u><br>Local employment in project operations and maintenance activities will be monitored over  | At post-construction commissioning and annually in each road section through first   | EA/PIU<br>Monitoring results will be reported in project progress reports to ADB.  | Monitoring will track employment in road section-associated operations and project   |

|   | <b>Social Measure</b>   | <b>Timing/Frequency</b>   | <b>Responsibility</b>   | <b>Description</b>  |
|---|---|---|---|---|
|   | the first years of project operation.   | year following expiration of contractor's liability period.   |   | construction with attention to national origin, gender, position /skill level, and % local of the O&M workforce.                      |
|   | <u>Poverty</u><br>Poverty levels and trends in project-associated oblasts, rayons, and ayil okmotus will be monitored over the course of the construction period  | Annually in each road section through first year following expiration of contractor's liability period. | EA/PIU<br>Monitoring results will be reported in project progress reports to ADB. | Upon the PSA-established baseline, and employing NSC and ayil okmotu figures  |
|   | <u>Local Road Safety</u><br>For each project road section, incidence of road-associated accidents and injuries will be monitored over the first years of project operation.   | Annually in each road section through first year following expiration of contractor's liability period. | EA/PIU<br>Monitoring results will be reported in project progress reports to ADB. | Monitoring will include accident/injury incidence by age, gender, residence, and type.  |
|   | <u>Road-associated Enterprises</u><br>Establishment of new roadside enterprises associated with project construction or anticipating project operation will be monitored over the first years of project operation. | Annually in each road section through first year following expiration of contractor's liability period. | EA/PIU<br>Monitoring results will be reported in project progress reports to ADB. | Monitoring will include attention to formal/informal sector, enterprise type, and gender-disaggregated data on associated employment. |
| Legend: ADB = Asian Development Bank, CBO = community-based organization, CC = construction contractor, CSC = construction supervision consultant, CSO = civil society organization, DDC = detailed design consultant, EA = executing agency, MOTR = Ministry of Transport and Roads, NGO = non-governmental organization, NSC = National Statistical Committee, PIA = project influence area, PIU = project implementation unit, PPTA = project preparatory technical assistance, PSA = poverty and social assessment, TOR = terms of reference. |   |   |   |   |

## IX. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

43. The following section describes the project's specific monitoring, evaluation, reporting, and communications arrangements.

### A. Project Design and Monitoring Framework

| Impact the Project is Aligned with   |   |   |   |
|--|---|---|---|
| Enhanced regional and national connectivity (National Sustainable Development Strategy for 2013–2017) <sup>a</sup>   |   |   |   |
| Results Chain  | Performance Indicators with Targets and Baselines   | Data Sources and Reporting Mechanisms   | Risks   |
| <b>Outcome</b><br>More efficient and safer movement of goods and people  | a. Travel time between Naryn and Osh reduced by 50% (11 hours) by 2022 (2015 baseline: 22 hours) when the entire north–south corridor project is implemented<br><br>b. Daily vehicle traffic from Epkin to Bashkugandy (annual average) increased to 5,572 by 2022 (2015 baseline: 1,621)                 | a. MOTR report<br><br>b. MOTR report  | Adjacent sections experience delays in project implementation   |
| <b>Outputs</b><br>1. 70 km (Km 89–Km 159) of the highway connecting Epkin to Bashkugandy upgraded to category II standard and made operational<br><br>2. Institutional capacity strengthened | 1. 70 km of road rehabilitated and the pavement international roughness index reduced to 3.00 m/km by 2021 (2015 baseline: 8.33 m/km)<br><br>2a. A RAMS designed and implemented by 2020 (2015 baseline: 0)<br><br>2b. The PIU's administrative manual and procedures in place by 2020 (2015 baseline: 0) | 1. MOTR and ADB project completion report<br><br>2a. ADB review missions and consultants' reports<br><br>2b. ADB review missions and consultants' reports | Cost overruns caused by unexpected price increases during construction<br><br>Lack of technical expertise to continue the RAMS<br><br>Lack of understanding of the new administrative process on the part of the PIU and MOTR |

### Key Activities with Milestones

1. Road from Epkin village to Bashkugandy village totaling 70 km (Km 89–Km 159) rehabilitated
  - 1.1 Recruit detailed design consultants by February 2016.
  - 1.2 Recruit supervision consultants by December 2017.
  - 1.3 Award civil works contract by December 2017.
  - 1.4 Complete civil works by July 2021.
2. Institutional capacity strengthened
  - 2.1 Recruit RAMS consultant by October 2017, and the MOTR will design and apply the RAMS in planning the key road network by June 2020.
  - 2.2 Put in place the PIU's administrative manual and procedures by June 2017.

### Inputs

ADB: \$95.11 million equivalent<sup>b</sup>

Government: \$19.24 million

### Assumptions for Partner Financing

Not applicable

ADB = Asian Development Bank, CAREC = Central Asia Regional Economic Cooperation, km = kilometer, Km = distance marker, MOTR = Ministry of Transport and Roads, PIU = project implementation unit, RAMS = road asset management system.

Note: The design and monitoring framework covers only the scope to be financed and administered by ADB.

<sup>a</sup> National Council for Sustainable Development of the Kyrgyz Republic. 2013. *National Sustainable Development Strategy for the Kyrgyz Republic, 2013–2017*. Bishkek.

<sup>b</sup> Includes the ADB-approved Asian Development Fund grant for a \$3 million project design advance to engage detailed design consultants in 2015.

Source: ADB.

## B. Monitoring

44. **Project performance monitoring** MOTR will establish a project performance monitoring system similar to the systems that are already in place for on-going ADB financed projects. The current base data will be updated prior to commencement of civil works. Thereafter, IPIG staff together with the Engineer and contractor will collect data at least once every 12 months and include them in its annual reports. ADB will use the project performance reporting system<sup>16</sup> in monitoring the overall performance of the Project.

45. **Compliance monitoring:** Covenants on policy, legal, financial, economic, environmental, labor standards and others will be monitored regularly through various reports (monthly progress reports, quarterly progress reports, and annual reports), and discussions during review missions.

46. **Safeguards monitoring:** The monitoring and reporting of the activities identified in the environment and resettlement action plans is discussed in Section VII.

47. **Gender and social dimensions monitoring:**<sup>17</sup> Gender and social data will be included by IPIG into the performance monitoring system. Public consultations will be conducted

<sup>16</sup> ADB's project performance reporting system is available at:

<http://www.adb.org/Documents/Slideshows/PPMS/default.asp?p=evaltool>.

<sup>17</sup> ADB's *Handbook on Social Analysis: A Working Document*, is available at: <http://www.adb.org/Documents/Handbooks/social-analysis/default.asp>, *Staff Guide to Consultation and Participation*: <http://www.adb.org/participation/toolkit-staff-guide.asp>, and, *CSO Sourcebook: A Staff Guide to Cooperation with Civil Society Organizations*: <http://www.adb.org/Documents/Books/CSO-Staff-Guide/default.asp>

regularly to foster public awareness of the project and its social implications. Implementation of the social summary matrix will be included in the project annual monitoring report.

### C. Evaluation

48. Within 6 months of physical completion of the Project, MOTR will submit a project completion report to ADB.<sup>18</sup> In addition to the periodic monitoring, ADB and MOTR will evaluate the Project's impact. Thereafter, ADB will conduct its own evaluation based on MOTR's report and other assessments and prepare a report for discussion with the Government. ADB's Independent Evaluation will also examine the Project within 3 years of completion.

### D. Reporting

49. MOTR, through IPIG, will submit to ADB (i) monthly reports; (ii) quarterly progress reports in a format consistent with ADB's project performance reporting system, within 2 weeks of the end of each quarter covered; and (iii) a project completion report within 3–6 months of physical completion of the Project. A project annual report will report on inputs and outputs and start generating information for the outcome and impact indicators of the design and monitoring framework. Implementation of the social summary matrix will be included in the annual monitoring report.

### E. Stakeholder Communication Strategy

50. MOTR/IPIG will maintain and regularly update its website with information on the Project, and regularly consult with the public and civil society organizations in respect of each of the foregoing matters.

| Project Document                           | Means of Communication   | Responsible Party | Frequency   | Audience(s)                                |
|--|--|-------------------|---|--|
| Project Information Document (PID)         | ADB's website  | ADB               | Initial PID no later than 30 calendar days of approval of the concept paper; quarterly afterwards   | General Public                             |
| Initial Environmental Examination Report   | ADB's and MOTR/IPIG's website, public consultations and brochures/leaflets for affected people | ADB, MOTR         | Initial environmental examination to be posted on the websites before project loan approval; documents always available online at ADB and MOTR/IPIG websites; EMP updated regularly | General public and project affected people |
| LARP                                       | ADB's and MOTR/IPIG's website, public consultations and brochures/leaflets for affected people | ADB, MOTR         | LARP to be posted on the websites before project loan approval; documents always available online at ADB and MOTR/IPIG websites; and every time LARP is revised.                    | General public and project affected people |
| Report and Recommendation to the President | ADB's website  | ADB               | No later than 14 days of Board approval of the project  | General Public                             |
| Loan Agreement                             | ADB's and  | ADB               | No later than 14 days of  | General Public                             |

<sup>18</sup> Project completion report format is available at: <http://www.adb.org/Consulting/consultants-toolkits/PCR-Public-Sector-Landscape.rar>



| Project Document                      | Means of Communication        | Responsible Party | Frequency  | Audience(s)  |
|---------------------------------------|-------------------------------|-------------------|--|--|
|                                       | MOTR/IPIG's website           |                   | Board approval of the project  |  |
| Project Administration Manual (PAM)   | ADB's and MOTR/IPIG's website | ADB               | No later than 14 days of Board approval of the project, always available online after update | General Public, project contractors and consultants      |
| Project Performance Management System | MOTR/IPIG's website           | IPIG              | Routinely disclosed, no specific requirements  | General Public and project affected people in particular |
| Major Change in Scope                 | ADB's website                 | ADB               | Within 2 weeks of approval of change   | General Public   |
| Completion Reports                    | ADB's and IPIG's website      | ADB               | Within 2 weeks of circulation to the Board for information                                   | General Public   |
| Evaluation Report                     | ADB's website                 | ADB               | No later than 14 days from the date of circulation to Management and the Board               | General Public   |

## **X. ANTICORRUPTION POLICY**

51. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the Project.<sup>19</sup> All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all Project contractors, suppliers, consultants and other service providers. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the Project.<sup>20</sup>

52. To support these efforts, relevant provisions are included in the financing agreement and the bidding documents for the Project.

## **XI. ACCOUNTABILITY MECHANISM**

53. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism.<sup>21</sup> The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should resolve any issue with the concerned ADB operations department. If they are not satisfied with the action taken, only then that the complainant should bring the issue to the Accountability Mechanism. MOTR will maintain the present grievance redress mechanism outlined in below, and ensure that:

- (i) all action taken are in full compliance with ADB's SPS requirements;
- (ii) IPIG posts project information together with names and contact information of its focal persons as well as those of the contractor and the engineer (construction supervision consultant) at the project site and in Bishkek; and

<sup>19</sup> Available at: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>

<sup>20</sup> ADB's Integrity Office web site is available at: <http://www.adb.org/integrity/unit.asp>

<sup>21</sup> For further information see: <http://www.adb.org/Accountability-Mechanism/default.asp>

- (iii) the consultant's and contractor's safeguards specialists carry out their tasks by regularly consulting with local communities and local authorities. A summary of discussions should be included in the project progress reports to ADB.

## **XII. RECORD OF PAM CHANGES**

54. All revisions/updates during course of implementation should be retained in this Section to provide a chronological history of changes to implemented arrangements recorded in the PAM.

| Version | Creation Date | Revision Date | Reasons of Change | Main Content of Change  |
|---------|---------------|---------------|-------------------|---|
| 1       |               | July 2017     | Project Inception | Project Readiness Activities, Contract and Disbursement S-curve, DMF milestones |

## PROCUREMENT PLAN

### Basic Data

|  |   |
|--|---|
| <b>Project Name:</b> CAREC Corridors 1 and 3 Connector Road Project  |   |
| <b>Project Number:</b> 48401-007   | <b>Approval Number:</b> 0496/3432   |
| <b>Country:</b> Kyrgyz Republic  | <b>Executing Agency:</b> Ministry of Transport and Roads                    |
| <b>Project Procurement Classification:</b> B   | <b>Implementing Agency:</b> Investment Projects Implementation Group (IPIG) |
| <b>Procurement Risk:</b> Substantial   |   |
| <b>Project Financing Amount:</b> \$260,370,000<br><b>ADB Financing:</b> \$95,110,000<br><b>Cofinancing (ADB Administered):</b> None<br><b>Non-ADB Financing:</b> \$165,260,000 | <b>Project Closing Date:</b> 31 January 2022                                |
| <b>Date of First Procurement Plan:</b> 19 October 2016   | <b>Date of this Procurement Plan:</b> 18 April 2017, Version 2              |

### A. Methods, Thresholds, Review and 18-Month Procurement Plan

#### 1. Procurement and Consulting Methods and Thresholds

Except as the Asian Development Bank (ADB) may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

| Procurement of Goods and Works              |   |          |
|---|---|----------|
| Method                                      | Threshold                               | Comments |
| International Competitive Bidding for Goods | \$1,000,000                             |          |
| National Competitive Bidding for Goods      | Between US\$ 100,001 and US\$ 999,999   |          |
| Shopping for Goods                          | Up to US\$100,000                       |          |
| International Competitive Bidding for Works | US\$ 3,000,000 and Above                |          |
| National Competitive Bidding for Works      | Between US\$ 100,001 and US\$ 2,999,999 |          |
| Shopping for Works                          | Up to US\$100,000                       |          |

| Consulting Services  |          |
|--|----------|
| Method   | Comments |
| Quality and Cost Based Selection (QCBS)                    |          |
| Individual Consultants Selection for Individual Consultant |          |

#### 2. Goods and Works Contracts Estimated to Cost \$1 Million or More

The following table lists goods and works contracts for which the procurement activity is either ongoing or expected to commence within the next 18 months.

| Package Number <sup>1</sup> | General Description   | Estimated Value | Procurement Method | Review [Prior / Post] | Bidding Procedure | Advertisement Date (quarter/year) | Comments  |
|-----------------------------|---|-----------------|--------------------|-----------------------|-------------------|-----------------------------------|---|
| 1                           | Rehabilitation of CAREC Corridors 1 and 3 Connector Road Epkin to Bashkugandy section (Km 89 to Km 159) | \$ 88.5 million | ICB                | Prior                 | 1S2E              | Q2 / 2017                         | Prequalification of Bidders: N<br><br>Domestic Preference |

|  |  |  |  |  |  |  |   |
|--|--|--|--|--|--|--|---|
|  |  |  |  |  |  |  | Applicable: N<br><br>Bidding Document: Large Works<br><br>Comments: Large Works |
|--|--|--|--|--|--|--|---|

ICB = International competitive bidding, n = no, y = yes  
Source: Asian Development Bank estimates.

### 3. Consulting Services Contracts Estimated to Cost \$100,000 or More

The following table lists consulting services contracts for which the recruitment activity is either ongoing or expected to commence within the next 18 months.

| Package Number | General Description      | Estimated Value | Recruitment Method | Review (Prior / Post) | Advertisement Date (quarter/year) | Type of Proposal | Comments  |
|----------------|--------------------------|-----------------|--------------------|-----------------------|-----------------------------------|------------------|---|
| 1              | Construction Supervision | \$3.26 million  | QCBS               | Prior                 | Q2 / 2017                         | FTP              | Assignment: International<br><br>Quality-Cost Ratio: 90:10<br><br>Comments: International (90:10)                                       |
| 2              | Road Asset Management    | \$2.41 million  | QCBS               | Prior                 | Q1 / 2017                         | FTP              | Assignment: International<br><br>Quality-Cost Ratio: 90:10<br><br>Comments: International (90:10)                                       |
| 3              | Auditing                 | \$0.1 million   | QCBS               | Prior                 | Q4 / 2017                         | BTP              | Assignment: National<br><br>Quality-Cost Ratio: 80:20<br><br>Comments: International or National, LCS. ADB share only, excluding taxes. |
| 4              | PBM Specialist           | \$0.3 million   | ICS                | Prior                 | Q3 / 2017                         |                  | Assignment: International<br><br>Expertise: PBM Experts<br><br>Comments: International and National, 2 contracts                        |

BTP = biodata technical proposal, CQS = consultant's qualification selection, FTP = full technical proposal, ICS = Individual consultant selection, LCS = Least cost selection, QCBS = quality- and cost-based selection.  
Source: Asian Development Bank estimates.

#### 4. Goods and Works Contracts Estimated to Cost Less than \$1 Million and Consulting Services Contracts Less than \$100,000 (Smaller Value Contracts)

The following table groups smaller-value goods, works and consulting services contracts for which the activity is either ongoing or expected to commence within the next 18 months.

| Goods and Works |                      |                 |                     |                    |                                     |                   |                                    |                                   |
|-----------------|----------------------|-----------------|---------------------|--------------------|-------------------------------------|-------------------|------------------------------------|-----------------------------------|
| Package Number  | General Description  | Estimated Value | Number of Contracts | Procurement Method | Review [Prior / Post/Post (Sample)] | Bidding Procedure | Advertisement Date (quarter/ year) | Comments                          |
| 1a              | PIU office equipment | \$0.05 million  | 1                   | Shopping           | Prior                               |                   | Q3 / 2017                          | Comments: TBD number of contracts |

| Consulting Services |                                |                 |                     |                    |                       |                                    |                               |  |
|---------------------|--------------------------------|-----------------|---------------------|--------------------|-----------------------|------------------------------------|-------------------------------|--|
| Package Number      | General Description            | Estimated Value | Number of Contracts | Recruitment Method | Review (Prior / Post) | Advertisement Date (quarter/ year) | Type of Proposal <sup>8</sup> | Comments <sup>9</sup>  |
| 1b                  | Project management Specialists | \$1.6 million   | 20                  | QCBS               | Prior                 | Q3 / 2017                          | BTP                           | Assignment: International<br><br>Quality-Cost Ratio: 80:20<br><br>Comments: International and National, 20 contracts |

BTP = biodata technical proposal, CQS = consultant's qualification selection, FTP = full technical proposal, ICS = Individual consultant selection, LCS = least cost selection, PIU = project implementation unit, QCBS = quality- and cost-based selection, STP = simplified technical proposal, Tbd = to be determined.

Source: Asian Development Bank estimates.

#### B. Indicative List of Packages Required Under the Project

The following table provides an indicative list of goods, works and consulting services contracts over the life of the project, other than those mentioned in previous sections (i.e., those expected beyond the current period).

| Goods and Works |                     |                              |                               |                    |                       |                                |                       |
|-----------------|---------------------|------------------------------|-------------------------------|--------------------|-----------------------|--------------------------------|-----------------------|
| Package Number  | General Description | Estimated Value (cumulative) | Estimated Number of Contracts | Procurement Method | Review [Prior / Post] | Bidding Procedure <sup>6</sup> | Comments <sup>7</sup> |
|                 | None                |                              |                               |                    |                       |                                |                       |

| Consulting Services |                     |                              |                               |                    |                       |                  |          |
|---------------------|---------------------|------------------------------|-------------------------------|--------------------|-----------------------|------------------|----------|
| Package Number      | General Description | Estimated Value (cumulative) | Estimated Number of Contracts | Recruitment Method | Review (Prior / Post) | Type of Proposal | Comments |
|                     | None                |                              |                               |                    |                       |                  |          |

#### C. List of Awarded and On-going, and Completed Contracts

The following tables list the awarded and on-going contracts, and completed contracts.

##### 1. Awarded and On-going Contracts

| Goods and Works |                     |                 |                        |                    |                                   |  |          |
|-----------------|---------------------|-----------------|------------------------|--------------------|-----------------------------------|--|----------|
| Package Number  | General Description | Estimated Value | Awarded Contract Value | Procurement Method | Advertisement Date (quarter/year) | Date of ADB Approval of Contract Award | Comments |
|                 |                     |                 |                        |                    |                                   |  |          |
|                 |                     |                 |                        |                    |                                   |  |          |

| Consulting Services |   |                 |                        |                    |                                   |  |  |
|---------------------|---|-----------------|------------------------|--------------------|-----------------------------------|--|--|
| Package Number      | General Description                         | Estimated Value | Awarded Contract Value | Recruitment Method | Advertisement Date (quarter/year) | Date of ADB Approval of Contract Award | Comments   |
| 1                   | Detailed Design                             | \$3 million     | \$2.34 million         | QCBS               | Q1 / 2015                         | Dec 2015                               | Contract awarded to Japan Overseas Consulting Co. Ltd., Inc. (G14681). Financed under the project design advance Grant 6002. |
|                     | Project Management (Procurement Specialist) |                 | \$1,835.86             | ICS                | Q2 / 2017                         | May 2017                               | Procurement Specialist (awarded to Kairat Karimov)   |
|                     | Project Management (Coordinator)            |                 | \$8,195                | ICS                | Q3 / 2017                         | July 2017                              | Coordinator (awarded to Sanjan Asanaliev)  |

## 2. Completed Contracts

| Goods and Works |                     |                 |                |                    |                                   |  |                    |          |
|-----------------|---------------------|-----------------|----------------|--------------------|-----------------------------------|--|--------------------|----------|
| Package Number  | General Description | Estimated Value | Contract Value | Procurement Method | Advertisement Date (quarter/year) | Date of ADB Approval of Contract Award | Date of Completion | Comments |
|                 |                     |                 |                |                    |                                   |  |                    |          |
|                 |                     |                 |                |                    |                                   |  |                    |          |

| Consulting Services |                     |                 |                |                    |                                   |  |                    |          |
|---------------------|---------------------|-----------------|----------------|--------------------|-----------------------------------|--|--------------------|----------|
| Package Number      | General Description | Estimated Value | Contract Value | Recruitment Method | Advertisement Date (quarter/year) | Date of ADB Approval of Contract Award | Date of Completion | Comments |
|                     |                     |                 |                |                    |                                   |  |                    |          |
|                     |                     |                 |                |                    |                                   |  |                    |          |

## B. National Competitive Bidding

1. **General.** The procedures to be followed for national competitive bidding shall be for tendering with unlimited participation and the two-stage tendering set forth in Law of the Kyrgyz Republic on Public Procurement of Goods, Works and Services effective on April 2015 with the clarifications and modifications described in the following paragraphs required for compliance with the provisions of the ADB Procurement Guidelines.

2. **Eligibility.** ADB: The eligibility of bidders shall be as defined under section I of ADB's Procurement Guidelines published by ADB in April 2015, as amended from time to time; accordingly, no bidder or potential bidder should be declared ineligible to ADB-financed contracts for other reasons than the ones provided by section I of ADB's Guidelines. Bidders must be nationals of member countries of ADB, and offered goods, works and services must be produced in and supplied from member countries of ADB.

3. **Prequalification.** Normally, post-qualification shall be used unless explicitly provided for in the loan agreement/procurement plan. Irrespective of whether post qualification or prequalification is used, eligible bidders (both national and foreign) shall be allowed to participate.

### 4. Registration and Licensing

- (i) Bidding shall not be restricted to pre-registered/licensed firms.
- (ii) Where registration or licensing is required, bidders (i) shall be allowed a reasonable time to complete the registration or licensing process; and (ii) shall not be denied registration/licensing for reasons unrelated to their capability and resources to successfully perform the contract, which shall be verified through post-qualification.
- (iii) Foreign bidders shall not be precluded from bidding. If a registration or licensing process is required, a foreign bidder declared the lowest evaluated bidder shall be given a reasonable opportunity to register or to obtain a license.

5. **Bidding Period.** The minimum bidding period is twenty-eight (28) days prior to the deadline for the submission of bids.

6. **Bidding Documents.** Procuring entities should use standard bidding documents for the procurement of goods, works and services acceptable to ADB.

7. **Preferences.** No domestic preference shall be given for domestic bidders and for domestically manufactured goods

8. **Advertising.** Invitations to bid shall be advertised in at least one widely circulated national daily newspaper or freely accessible, nationally-known website allowing a minimum of twenty-eight (28) days for the preparation and submission of bids. Bidding of NCB contracts estimated at US\$500,000 equivalent or more for goods and related services or US\$1,000,000 equivalent or more for civil works shall be advertised on ADB's website via the posting of the Procurement Plan.

9. **Bid Security.** Where required, bid security shall be in the form of a bank guarantee from a reputable bank.

**10. Bid Opening and Bid Evaluation**

- (i) Bids shall be opened in public.
- (ii) Evaluation of bids shall be made in strict adherence to the criteria declared in the bidding documents and contracts shall be awarded to the lowest evaluated bidder.
- (iii) Bidders shall not be eliminated from detailed evaluation on the basis of minor, non-substantial deviations.
- (iv) No bidder shall be rejected on the basis of a comparison with the employer's estimate and budget ceiling without the Bank's prior concurrence.
- (v) A contract shall be awarded to the technically responsive bidder that offers the lowest evaluated price and who meets the qualifying requirements set out in the bidding documents.
- (vi) No negotiations shall be permitted.
- (vii) Price verification shall not be applied.

**11. Rejection of All Bids and Rebidding.** Bids shall not be rejected and new bids solicited without ADB's prior concurrence.

**12. Participation by Government-owned enterprises.** Government-owned enterprises in Kyrgyz Republic shall be eligible to participate as bidders only if they can establish that they are legally and financially autonomous, operate under commercial law and are not a dependent agency of the contracting authority. Furthermore, they will be subject to the same bid and performance security requirements as other bidders.

**13. Right to Inspect/Audit.** A provision shall be included in all NCB works and goods contracts financed by ADB requiring suppliers and contractors to permit ADB to inspect their accounts and records and other documents relating to the bid submission and the performance of the contract, and to have them audited by auditors appointed by ADB.

**14. Fraud and corruption**

- (i) The Borrower shall reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the contract in question.
- (ii) ADB will declare a firm or individual ineligible, either indefinitely or for a stated period, to be awarded a contract financed by ADB, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for, or in executing, an ADB-financed contract.

**15. National Sanctions List.** National sanctions lists may be applied only with prior approval of ADB.



**TERMS OF REFERENCE FOR CONSULTING SERVICES  
FOR ENGINEERING AND SUPERVISION CONSULTANT**

1. The Consultant, designated as the Engineer for the civil works contracts as defined in the FIDIC conditions for construction, will assist the Ministry of Transport and Roads (MOTR) of the Kyrgyz Republic, the executing agency for the Project and the Employer for the civil works contracts, in reviewing and approving the contractor's working drawings, supervising the civil works for the road sections, and ensuring compliance with road safety standards, environmental protection measures, and social safeguards.

2. **Inputs.** The Client will select an international firm, in association with national consultants, to carry out the tasks in this TOR. The QCBS selection method will be used. Consulting services require a total of 94 person-months of international experts and 207 person-months of national experts, and will cover period of 48 months.

| <b>i. International Experts</b>     | <b>No. of Experts</b> | <b>No. of Person-Months</b> |
|-------------------------------------|-----------------------|-----------------------------|
| Resident Engineer/Team Leader       | 1                     | 34                          |
| Pavement and Materials Engineer     | 1                     | 12                          |
| Structural Engineer                 | 1                     | 16                          |
| Quality Assurance Engineer          | 1                     | 16                          |
| Road Safety Engineer                | 1                     | 3                           |
| Contracts Specialist                | 1                     | 3                           |
| Social and Resettlement Specialist  | 1                     | 4                           |
| Environment Specialist              | 1                     | 6                           |
|                                     |                       | <b>94</b>                   |
| <b>ii. National Experts</b>         |                       |                             |
| Highway Engineer/Deputy Team Leader | 1                     | 34                          |
| Pavement and Materials Engineer     | 1                     | 24                          |
| Structural Engineer                 | 1                     | 24                          |
| Quality Assurance Engineer          | 1                     | 30                          |
| Quantity Surveyor 1                 | 1                     | 30                          |
| Quantity Surveyor 2                 | 1                     | 30                          |
| Road Safety Engineer                | 1                     | 4                           |
| Social and Resettlement Specialist  | 1                     | 6                           |
| Environment Specialist              | 1                     | 21                          |
| Hydrological/Drainage Specialist    | 1                     | 4                           |
|                                     |                       | <b>207</b>                  |

3. The Consultant will:

- (i) review the contractor's working drawings and oversee the civil works to ensure that the quality and the completed works meet all the standards and specifications, including the environmental protection measures, set out in the works contract documents;
- (ii) ensure that all works comply with the agreed schedule and budget, terms and conditions of the contracts, standard engineering practice, and ADB's safeguards policies;
- (iii) monitor and report on progress and quality of works during the periods and times
- (iv) provide general guidance and issue instructions to contractors;
- (v) make engineering decisions in consultation with the Client, and
- (vi) advise the Client on work progress, quality control, and implementation issues,

if any.

4. The specific tasks of the Consultant are the following:

**(a) Supervision and Administration**

- (i) Ensure that the construction methods proposed by the contractor for carrying out the works are satisfactory.
- (ii) Inspect contractor's construction equipment, results of material and soil tests, safety of the works, property and personnel, and schedule of mitigation measures for adverse environmental impacts. Notify contractor to remedy works and materials that fail to comply with the specifications.
- (iii) Monitor and supervise (a) progress of contractors' works vis-à-vis contract schedule, and (b) quality of contractors' works vis-à-vis applicable technical specifications and design.
- (iv) Check that 'as-built' drawings are prepared by the contractors for all works as construction progresses.
- (v) Ensure that road safety design requirements are implemented following the contract specifications.
- (vi) Develop quality assurance system and quality control plan for provisions of asphalt-concrete pavement for road and reinforced concrete for bridges.
- (vii) Implement a community targeted awareness raising campaign on trafficking and sexually transmitted diseases, as well as on road safety.
- (viii) Establish procedures to verify contractor performance and report progress and problems on time, including quality control reports, quantity survey records, requests for variation or change orders, and contractor's claims and invoices.
- (ix) Evaluate any proposed changes (e.g., time, scope and cost) by the contractor during the course of the Project.
- (x) Review and certify work volume, and process interim and final payments of the contractor. Ensure timely submission of contractor's interim payment certificates, and release of payment.
- (xi) Ensure project financial management procedures are in place and are strictly followed, specifically relating to payments, financial accounting, requests for time extension, and contractor's claims and invoices.

**(b) Documentation and Reporting**

- (i) Report and update the works implementation schedule, highlight any unforeseen delays, and timely propose corrective measures.
- (ii) Undertake project performance monitoring and evaluation<sup>22</sup> and reporting up to project completion. Collect baseline survey data based on the indicators in the project's design and monitoring framework; and measure the indicators over time during the assignment period. Design a simple MS Excel or similar system for recording the baseline and periodic data.
- (iii) Prepare and submit reports as indicated in Section F (Reporting Requirements) in this TOR.
- (iv) Develop and maintain a storage and retrieval system of records

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<sup>22</sup> Following the project framework and ADB's Project Performance Management System Handbook.

documenting information supplied by the field teams, decisions made at meetings, progress on civil works, certified achievements and milestones, financial records, any deviations from or changes to the contract plans (scope, cost, materials, time), correspondences, site diaries, test data and quality control reports, quantity survey records, as-built drawings, and progress reports.

**5. Environmental Safeguard Supervision.** The consultant will:

- (i) undertake a cumulative assessment of the potential environmental impact of the Project;
- (ii) update the EMP detailing environmental mitigation measures to address each identified impact, and recommend appropriate environmental mitigation measures;
- (iii) assist IPIG in implementation of EMP to ensure compliance;
- (iv) assess the cost, responsibilities, schedule, location, and monitoring framework associated with the implementation of the mitigation measures and the EMP;
- (v) assist IPIG in incorporating EMP in bidding documents and bid evaluation;
- (vi) provide guidance and quality assurance in undertaking the environmental monitoring as outlined in the EMP;
- (vii) prepare a section in Project quarterly progress report on environmental safeguard compliance;
- (viii) assist IPIG in compiling semi-annual environmental monitoring reports;
- (ix) monitor compliance with environmental mitigation and management plans, contractor health and safety plan;
- (x) conduct consultation with groups to be affected by the project;
- (xi) undertake the environmental monitoring as outlined in the EMP; and
- (xii) prepare related certificates or any relevant papers or documentations.

**6. Social Development and Resettlement Supervision.** The consultant will:

- (i) assist in monitoring and reporting of the land acquisition and resettlement plan (LARP) implementation;
- (ii) monitor contractor's compliance with and performance of required actions regarding HIV/AIDS, human trafficking, and core labor standards in accordance with the contract documents, such as awareness and education of laborers and workers;
- (iii) ensure that the contractor does not involve child labor in the execution of the civil works contracts in accordance with the provisions of the contract agreement; and
- (iv) support the implementation of the social summary matrix and its implementation progress reporting.

**7. Requirements for Key Staff.** The key staff should have expertise, knowledge and skills as described below.

**Team Leader / Senior Highway Engineer**

The team leader must have expertise in all aspects of road design and construction supervision with experience in leading a team of multi-discipline experts. The team leader will have overall

responsibility for implementing the project and managing the team of consultants with expertise in bridge and road engineering, cost estimation and contract documentation, geology, traffic engineering, road safety, social development, environment, and construction supervision. He/she should be a senior engineer with a minimum of 15 years of relevant experience covering road design and construction projects. He should have good communication and reporting skills.

#### **Highway Engineer**

Should be familiar with the design of urban and rural highways or other major road schemes incorporating major bridges, tunnels and major grade separated interchanges, should have a minimum of 5 years' experience and preferable having experience in the region. He/she should be familiar with highway design software as well as detailed electronic designs for contract drawings.

#### **Pavement / Materials Engineer**

The Pavement / Materials Engineer should be a senior engineer with university degree in his/her field, or higher with a minimum of 10 years of relevant experiences in pavement design and works supervision of road projects with extensive knowledge in materials of roads and pavement and materials investigations. He/she should be familiar with international pavement design guidelines and state-of-the art pavement construction technologies. He/she should be familiar with the preparation of Contract Specifications for materials and testing.

#### **Soil / Geotechnical Engineer**

The Soil / Geotechnical Engineer should have at least 10 years' experience in geotechnical engineering and soil Mechanics. He should be familiar with local condition, slope and embankment construction, laboratory and in-situ testing, and foundation investigations.

#### **Bridge/Structural Engineer**

The Bridge/Structural Engineer should be a civil engineering degree with at least 15 years of work experience including a minimum of 7 years in structural engineering, design and supervision of Construction of bridges, culverts and other structures. The Bridge/Structural Engineer should possess knowledge and skills in bridge and structural engineering, seismic retrofitting, bridge loading tests, investigations of bridge failures, bridge design review, and bridge assessment and maintenance. Shall have experience in similar geographic areas, and is proficient in both written and spoken English.

#### **Hydraulic/Drainage Engineer**

The Hydraulic/Drainage Engineer should have a civil engineering degree with at least 15 years of work experience including a minimum of 7 years in hydrological and drainage engineering, and design and supervision of drainage structures. He/she should have experience in similar geographic areas and should be familiar with local condition, calculation and design methods.

#### **Road Safety Engineer**

The international Road Safety Engineer should has a bachelor degree in civil engineering, road safety or related field with at least 10 years of work experience including a minimum of 5 years in implementing and monitoring road safety in road construction projects. The Road Safety Engineer should have knowledge and skills in road safety aspects in design, road safety standards, preparing a road safety and traffic management plan in road construction sites, and development of road safety campaigns. Shall have experience in similar geographic areas, and is proficient in both written and spoken English. Knowledge of local languages is an advantage, but not required.

**Quality Assurance Engineer**

The international Quality Assurance Engineer should have a civil engineering degree or related field with at least 15 years of work experience including a minimum of at least 7 years in quality assurances and quality control in construction works, and materials testing. The Quality Assurance Engineer should possess knowledge and skills in supervision of works, and laboratory and in-situ testing. He/she should have experience in similar geographic areas, and is proficient in both written and spoken English. Knowledge of local languages is an advantage, but not required.

**Electrical / Street Lighting Specialist**

The Electrical / Street Lightening Specialist should have at least 5 years relevant experience in road and street lighting design and installation.

**Contracts Specialist**

The Contract Specialist should have a minimum of 5 years' experience in the preparation of Contract Documents and Specifications for major road or infrastructure projects using FIDIC. He/she should be familiar with ADB standard bidding documents and procurement guidelines. The Contracts Specialist shall possess knowledge and skills in contractor's claims management, resolution of disputes, arbitration proceedings in any project involving FIDIC general conditions, and application of price adjustment provisions. Shall have experience in similar geographic areas, and is proficient in both written and spoken English.

**Social Development / Resettlement Specialist**

The specialist should have a master's degree in social science with a minimum 10 years of work experiences. Up- to- date knowledge of ADB's safeguards policies and procedures, particularly on social impact assessment, poverty assessment, core labour standards, land acquisition, and resettlement, and its implementation are desirable. Experiences in ADB funded projects or projects funded by multilateral agencies in the transport sector will be preferable. The specialist shall also have experience in working in multidisciplinary teams with good communication skill.

**Environmental Specialist**

The Environmental Specialist should have at least 10 years' experience and familiarity with all aspects of environmental management and with significant experience in environmental management and monitoring of projects, environmental assessment and/or implementation of environmental mitigation measures on construction projects. The Environmental Specialist shall also have experience in working in teams of multi-discipline experts.

8. **Reporting Requirements.** The Consultant shall prepare the following reports in English and Russian and distribute them in the number of copies indicated below to MOTR and ADB. The format and content of each report is to be agreed with MOTR and ADB. For each report submitted an electronic copy will be provided. Standard software shall be used for preparation of the reports.

- (i) a traffic management and road safety plan within 2 months after commencement,
- (ii) Monthly progress reports by 10<sup>th</sup> day of each following month,
- (iii) Detailed quarterly progress reports by 15<sup>th</sup> day of each following quarter, reflecting safeguard compliance,
- (iv) Semi-annual safeguard monitoring reports (environment, social and land acquisition and resettlement), during project construction, within one month after each reporting period,

- (v) Performance monitoring and evaluation reports as required under the Loan Agreement,
- (vi) Road safety audits reports at issuance of construction and traffic management drawings, at about 50% physical completion, and at preopening of the project road,
- (vii) A detailed draft project completion report at 90% physical completion and a final project completion report within 2 months after physical completion of the Project, or on an alternative date as agreed with MOTR, and

Taking any action under a civil works contract designating the Consultant as “Engineer”, for which action, pursuant to such civil works contract, the written approval of the Client as “Employer” is required.

**TERMS OF REFERENCE FOR CONSULTING SERVICES  
FOR DATA COLLECTION AND ESTABLISHING A ROAD ASSET MANAGEMENT SYSTEM  
(RAMS)**

**A. Objectives**

1. Develop the RAMS component-by-component basis supported by strong institutional development, training and data collection. The initial road network to be included will include CAREC road network in the Kyrgyz Republic. The previous efforts and data of pavement, bridges and tunnels management systems will be incorporated already from the early stage. The aim is to demonstrate the benefits of the system with smaller scale pilot.

**B. Staffing Input**

2. The Client will select an international firm, in association with national consultants, to carry out the tasks in this TOR. The QCBS selection method will be used. Consulting services require a total of 47 person-months of international experts and 144 person-months of national experts, and will take place in over a period of 36 months.

| <b>i. International Experts</b> | <b>No. of Expert</b> | <b>No. of Months</b> |
|---------------------------------|----------------------|----------------------|
| Team Leader/RAMS Specialist     | 1                    | 20                   |
| Road Database Specialist        | 1                    | 10                   |
| HDM-4 Specialist                | 1                    | 5                    |
| Senior Data Collection Expert   | 1                    | 8                    |
| Capacity Building Specialist    | 1                    | 4                    |
|                                 |                      | <b>47</b>            |
| <b>ii. National Experts</b>     |                      |                      |
| RAMS Specialist                 | 1                    | 36                   |
| GIS Specialist                  | 1                    | 36                   |
| Field Data Collection Expert    | 1                    | 36                   |
| Data Management Specialist      | 1                    | 36                   |
|                                 |                      | <b>144</b>           |

**C. Scope of Work**

3. The specific objectives of the assignment are as follows:

- (i) The comprehensive review of the data collection procedures, data management and usage of data as developed during the previous efforts conducted through World Bank's and JICA's assistance.
- (ii) Agree and prepare the detailed list of the roads (survey network) to be included into the data collection in co-operation with the MOTR.
- (iii) The one off Road Location Survey of the survey network, including the collection of the road, bridge and structure inventory and furniture data, road geometry, GPS and video data. The establishment of the location referencing system.

- (iv) The annual collection of pavement condition data on the survey network, including the collection of roughness, rutting, geometry, GPS, pavement distress, video data, traffic data, bridge data, and tunnel data for two years.
- (v) All associated equipment validation, data processing, compliance monitoring and reporting.
- (vi) Developing a centralized relational Road Data Base (RDB) to include all relevant information on survey network for maintenance planning in one location stored in a logical manner. The RDB must be scalable for future enhancements.
- (vii) Purchasing, installing and calibrating HDM-4<sup>23</sup> software as a budgeting and planning tool for the MOTR. RDB shall be used as a primary input source for the HDM-4 and special attention shall be paid to developing the interface between RDB and HDM-4.
- (viii) Establishing a Geographic Information System (GIS) to analyze and display the RAMS information.
- (ix) Training of the MOTR staff, including top management and other relevant counterparts to manage the RAMS including e.g. data collection, maintenance planning, quality assurance and data visualization after the consultancy assignment.
- (x) Providing remote support for RAMS with some visits to Kyrgyzstan after the initial establishment effort.

#### **D. Requirement of Key Staff**

4. The key staff should have expertise, knowledge and skills as described below.

- (i) Team Leader / Road Asset Management Specialist (International Key Expert)

The candidate shall have a Master's or higher degree in civil engineering from an accredited university, with a Professional Engineer's license or a membership in a relevant professional association. The candidate shall have relevant experience in developing road asset management systems, and road and bridge data collection. The candidate shall have preferably minimum 12 years of general experience as a project manager or a team leader. The candidate shall have preferably 10 years of the project specific experience in managing similar projects both in developed and developing countries. Regional experience of Central Asia and South Caucasus countries will be an advantage. The candidate shall be fluent in English and shall be skilled in report writing.

- (ii) Road Database Specialist (International Key Expert)

The candidate shall have a Master's or higher degree in information technology, preferably specialized in database technology. The candidate shall have relevant experience in developing road databases and road asset management systems. The candidate shall have 12 years of general experience as a IT specialist and 10 years of the project specific experience in similar projects. The candidate shall have knowledge of HDM-4 model. Regional experience of Central Asia and South Caucasus countries will be an advantage. The candidate shall be fluent in English and shall be skilled in report writing.

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<sup>23</sup> Highway Development and Management Tool.



## (iii) HDM-4 Specialist (International Key Expert)

The candidate shall have a Master's or higher degree in civil or transport engineering or information technology. The candidate shall have relevant experience in developing road asset management systems with HDM-4 model. The candidate shall have 10 years of general experience as an engineer and 6 years of the project specific experience in similar projects in developing countries. The candidate shall have in-depth knowledge of the HDM-4 software, including relevant experience of databases and developing interface between HDM-4 and database. Regional experience of Central Asia and South Caucasus countries will be an advantage. The candidate shall be fluent in English and shall be skilled in report writing.

## (iv) Senior Data Collection Specialist (International Key Expert)

The candidate shall have a Bachelor's or higher degree in civil engineering, specialized in road construction/maintenance management. The candidate shall have 10 years of experience as a road engineer including extensive experience of road and bridge data collection and road maintenance in both developed and developing countries. The candidate shall have preferably 5 years of the project specific experience in data collection. Regional experience of Central Asia and South Caucasus countries will be an advantage. The candidate shall be fluent in English and shall be skilled in report writing.

## (v) Capacity Building Expert (International Key Expert)

The candidate shall have a Bachelor's or higher degree in business studies, communications, marketing, psychology, organizational development or civil engineering. The candidate shall have relevant experience in capacity building and/or developing strategies for road maintenance and administration, and road management system. The candidate shall have 10 and more year general experience as a development and capacity building specialist. The candidate shall have preferably 6 years of the project specific experience in both developed and developing countries. Regional experience of Central Asia and South Caucasus countries will be an advantage. The candidate shall be fluent in English and shall be skilled in report writing.

## (vi) GIS Specialist (National Key Expert)

The candidate shall have a Bachelor's or higher degree in information technology. The candidate shall have 10 year general experience as an IT specialist, preferably on infrastructure sector. The candidate shall have 5 year project specific experience as a GIS specialist. The candidate shall have knowledge of HDM-4 model. International experience will be considered as an advantage. The candidate shall be fluent in English and shall be skilled in report writing.

## (vii) Field Data Collection Expert (National Non-Key Expert)

The candidate shall have a Bachelor's or higher degree in civil engineering, specialized in road engineering. The candidate shall have 10 years of general experience as a road engineer including extensive experience of road and bridge maintenance and road safety. The candidate shall have 5 year project specific experience as a data collection expert. The candidate shall have knowledge of maintenance planning and road asset management systems. Experience of tunnels and international experience will be considered as an advantage. The candidate shall be fluent in English and shall be skilled in report writing.

(viii) Data Management Specialist (National Non-Key Expert)

The candidate shall have a Bachelor's or higher degree in information technology, preferably specialized in database engineering. The candidate shall have 5 years of experience as an IT specialist. The candidate shall have knowledge of HDM-4 model, GIS and road asset management systems. The candidate shall be fluent in English and shall be skilled in report writing.

**E. Reporting, Deliverables, and Payment**

5. The Consultant shall prepare the following reports/deliverables (recommendations, instructions, manuals for data collection / database operation / RAMS) in English and Russian languages and submit them in the numbers of copies indicated in below to the MOTR and ADB.

6. The Consultant shall provide fully licensed copies of multi-user HDM-4 software and GIS software. When commercial software for data collection and/or database management has been used, the fully licensed copies shall be submitted to MOTR.

(i) Inception Report

Inception report shall be submitted within four weeks from the mobilization. The report shall confirm the: (i) equipment to be used, (ii) calibration certificates and validation methodology, (iii) short list of validation sections, (iv) final survey methodology, and (v) resources and updated schedules. The purpose of the inception report is to fine tune the proposed methodology specific to project conditions which were not possible to identify and/or quantify at the time of the proposal. However, the Consultant shall not reduce the scope of work and/or resources specified in their proposal.

(ii) Calibration and Validation Report

The calibration and validation report shall be produced as a part of the equipment calibration and validation process as discussed above in the validation section. The purpose of the calibration and validation manual is to summarize the calibration and validation procedures adopted on this contract and their results. The manual shall include: (i) Description of calibration procedures adopted, (ii) Summary of calibration surveys and their results, (iii) Description of validation procedures adopted, (iv) Details of validation sites so that these sites are located easily in the future, and (v) Summary of validation surveys and their results. This report shall be submitted within the 14 days of the completion of the initial validation and no later than six weeks after the mobilization.

(iii) Data Management Manual

The purpose of the data management manual is to provide precise, clear and consistent instructions to the data management staff. The manual shall include: (i) Procedures for audit of survey log and field notes, (ii) Procedures for receiving data from field teams including data backup and data archiving, (iii) Procedures for the audit of raw data and for its completeness, (iv) Procedures for data processing, and (v) Procedures for validating processed data. The data management manual shall be submitted within 30 days from the start of the actual surveys.

## (iv) Survey Procedure Manual

The purpose of the survey procedures manual is to provide precise, clear and consistent instructions to field team(s). The manual should at least include: (i) Description of the system installation, operation and maintenance, (ii) Description of the field data to be collected, (iii) Definition of the data, distresses and other terms used, (iv) Visual images of the pavement distresses to be recorded and their classification, (v) Contingency measures including data back up and daily post survey data processing, (vi) Daily and weekly validation checks as required by this Contract, and (vii) Format of field notes and instructions to complete field notes. The survey procedures manual shall be submitted at least 7 days before the start of the actual surveys for Client approval.

## (v) Capacity Building Report

The Capacity Building Report shall demonstrate the capacity building activities conducted during the project. The purpose of the report is to summarize the system components, including training material used, overall description of the system, lessons learned and future recommendations both from the institutional and technical development point of view. Training events and their dates and participants shall be documented. The report shall also include the description of the hands-on training conducted both in the office and on the field as well.

## (vi) Monthly Progress Reports

Progress reports shall briefly outline the progress to date and give an updated survey program at the end of each month.

## (vii) Final Report

The final report summarizes all tasks undertaken as part of the contract. This report shall contain the lessons learnt and recommendation for future data collection contracts. This report shall include a brief summary with outputs for distributing to wider community.

## (viii) Survey Data

Survey data shall include video files, raw data (2 copies) and processed data (2 copies).

## (ix) Traffic Management Plan

Traffic Management Plan (TMP) establishes the minimum requirements for traffic management that shall be implemented during the field survey operations. A generic TMP shall be developed by the Consultant and agreed by MOTR and ADB. This shall cover all aspects of the work including calibration and validation and all other field operations. The TMP shall also include work hours and details of non-working days (such as weekends and holidays). The Consultant shall provide TMP at least one week before the start of the equipment calibration and validation.

## (x) Traffic Management and Safety Database

The Consultant shall maintain a traffic management and safety database (spreadsheet or similar). This database shall include incidents, accidents and comments/issues raised by the community.

(xi) Quality Management Plan

The purpose of the Quality Management Plan (QMP) is to detail the processes, procedures and systems to be used to ensure the integrity, accuracy and quality of the data to be collected.

## **OUTLINE TERMS OF REFERENCE FOR CONSULTING SERVICES FOR REVIEW OF PERFORMANCE-BASED MAINTENANCE CONTRACT AND IMPLEMENTATION**

### **A. Background**

1. The Kyrgyz Republic is a landlocked, mountainous country with formidable geographic barriers that seriously constrain its ability to effectively participate in international trade. Its development efforts are further hampered by inadequate physical infrastructure, which is in need of investment and regular maintenance.
2. The Ministry of Transport and Roads (MOTR) of the Kyrgyz Republic is implementing a pilot performance-based maintenance (PBM) contract with financial assistance of the Asian Development Bank (ADB).
3. Performance-based contracting for Roads is designed to increase the efficiency and effectiveness of road asset management and maintenance. It should ensure that the physical condition of the roads under contract is adequate for the need of road users, over the entire period of the contract, which is normally several years. This type of contract significantly expands the role of the private sector, from the simple execution of works to the management and conservation of road assets.
4. The pilot performance-based maintenance (PBM) contract is scheduled to commence in 2016 and a review of the PBM contract and implementation arrangements and performance is envisaged. The Works under the PBM contract consist of routine maintenance, winter maintenance, emergency works, day works and resurfacing works. The contract documents of the pilot PBM based on the Standard Bidding Document for “Procurement of Works, Small Contracts” issued by the Asian Development Bank.

### **B. Description of the Roads Included in the Pilot PBM Contract**

5. The road sections included in the pilot PBM Contract are located in the Chuï Province, Kara-Balta rayon, of Kyrgyz Republic. The total length of the pilot road sections included in the contract is 68.5 km and includes the following sections:
  - (i) international road Bishkek–Osh, Km 61–Km 129.5 ; and
  - (ii) starting after the roundabout at the entrance of Kara-Balta, finishing at the tunnel entry gate.
6. The initial section from Kara-Balta to Sosnovka, the toll station, and above up to Km 103–104, is located in relatively flat terrain, getting bendy after Km 95.
7. The subsequent section is located in mountainous terrain, with steep slopes and sharp bends, with the peak altitude above 3300 m at the tunnel gates, end of the contract.

### **C. Scope of Services**

8. In close consultation and collaboration with MOTR, the PBM Specialist will perform the following tasks:

- (i) Review implementation of pilot PBM Contract in close cooperation with MOTR;
- (ii) Oversee project implementation performance in accordance with stipulated contractual obligations;
- (iii) Assess achievements and problems encountered during pilot implementation;
- (iv) Provide suggestions for improvements of PBM Procurement and Bidding Documents, especially the condition of contracts and performance measures; and
- (v) Training to MOTR staff.

9. Upon compilation of lessons learned, the Consultant shall recommend; appropriate action plans for future assignments, for improvement of tender documents, especially the conditions of contracts, and to the performance measures. The Consultant shall also address any other areas where they feel modifications may be needed and shall give recommendations for the benefit of future implementations.

10. The consultants, in consultation with MOTR, will prepare a training program in the areas related to PBM contracting and will prepare comprehensive training proposals, including training objectives.

11. The training courses shall bring together professionals from the road maintenance sector, and cover all aspects of PBM contracts, including subjects such as (i) PBM concept and approach, (ii) administration of PBM contracts, (iii) planning and design of interventions needed to comply with required service levels, (iv) verification and control of service levels, etc. The consultant will develop the course content and the training materials for each course, including handouts to participants.

#### **D. Deliverables**

12. The PBM specialist is expected to provide the following deliverables:

- (i) The inception report within 3 weeks of engagement, elaborating on the initial work program;
- (ii) Interim Report within 6 months of engagement, describing the findings and achievements obtained so far;
- (iii) The draft final technical report 1 month before completion of the assignment describing the overall achievements of the services, suggestions for modification in the scope of PBM procurement and contract document; and
- (iv) The final technical report at completion of the assignment incorporating all comments received on the draft final report.

#### **E. Qualifications and Skills Requirement**

13. The assignment will be implemented for 12 months and requires 6 months input of an international PBM Specialist and 12 months of a local maintenance/PBM expert.

14. The international PBM specialist should have the following expertise, experiences and skills:

- (i) An advanced degree in civil/highway engineering or other relevant subject;
- (ii) At least 10 years of experiences of working in the fields of road maintenance, with considerable experience in PBM contract, preferably MDB financed contract;

- (iii) A minimum of 3 years' experience with road/highway asset management (operations and maintenance) is essential.
- (iv) Demonstrable skills in communicating road maintenance issues to a wide range of audiences; and
- (v) Russian language skills are an advantage.

## Environmental Monitoring Plan

| Issue  | What parameter is to be monitored?  | Where is the parameter to be monitored   | How is the parameter to be monitored?  | When is the parameter to be monitored? Frequency  | Institutional Responsibility |
|--|---|--|--|---|------------------------------|
| <b>Construction stage</b>  |   |  |  |   |                              |
| Water quality in surface waters (rivers)   | pH, dissolved oxygen, oil products, turbidity, total suspended solids, conductivity, temperature, lead  | Upstream and downstream where the Project road crosses the watercourse Tugol-Say (148+874)   | Measurement either directly in river water with a suitable measurement device or sample taking and measurement in a certified laboratory | Second round of baseline monitoring measurements to be conducted before construction start. Then on a monthly basis during construction stage   | CSC                          |
| Noise/ vibration Rehabilitation works within settlements at locations where the Project road runs close to sensitive receptors such as schools, hospitals, mosques, bazaars, cultural sites or other sensitive socioeconomic infrastructure. | Prior to construction and during construction activities within identified sensitive hotspots and sensitive receptors close vicinity of sensitive receptors regular control of noise level by portable measure instrument. In case noise standards are exceeded implementation of time restrictions for construction activities | At sensitive receptors within settlements <ul style="list-style-type: none"> <li>• Jumgal village, near the school on the road, LHS;</li> <li>• Kuyruchuk village, near the Azamat shop, RHS;</li> <li>• Tugol-Sai village, near the shop Kutman, LHS;</li> <li>• Bashkugandy village, near the school adjacent to the road, RHS.</li> <li>• Cultural sites (cemeteries)</li> </ul>  | By means of portable noise / vibration measurement device  | Second round of baseline monitoring measurements to be conducted before construction start. Then a monthly basis during construction stage.   | CSC                          |
| Physical damage of the Cultural sites (cemeteries)   | Cultural sites (cemeteries)   | Cultural sites (cemeteries): <ul style="list-style-type: none"> <li>• 158–160 km Cemetery on the (LHS), 6 and more km from the road.</li> <li>• 153 km–155 km Cemetery (RHS) on a hill 20–50 m away from the road.</li> <li>• 152 +300 km Cemeteries on the both sides for Tugol-Say village. The distance between the boundaries of the two cemeteries, 25 m; width of the existing road 13.4 m. From the border of the cemetery (RHS) to the road 3 m; Opposite side (LHS) 3–5 m.</li> <li>• 141 km +300 Cemetery on the left side (LHS) of the road, 10–15 m.</li> <li>• 138 km Complex of mausoleums - Clay mounds. Located close to the road on the right (RHS) and approximately 100 meters to the left (LHS).</li> <li>• 132 km Cemetery on the LHS located around road 20–30 m from the road.</li> </ul> | Visual observation   | Second round of baseline monitoring measurements to be conducted before construction start. Visual observation in construction period where the cemeteries are indicated (in the km). Document the condition of the cemeteries and mausoleums before constructions works. | CSC                          |



|  |   |   |   |  |   |
|--|---|---|---|--|---|
|  |   | <ul style="list-style-type: none"> <li>131 km Cemeteries on both sides of the road (3–3.5 m from the road)</li> </ul>   |   |  |   |
| Air quality deterioration  | Dust, noise, SO <sub>2</sub> , NO <sub>x</sub> , CO   | <p>Within settlements where the Project road comes close to sensitive receptors such as schools, hospitals, mosques, bazaars or other sensitive socioeconomic infrastructure. At asphalt plant and at aggregate crusher.</p> <p>Jumgal village, near the school on the road, LHS; Kuyruchuk village, near the Azamat shop, RHS; Tugol-Sai village, near the shop Kutman, LHS; Bashkugandy village, near the school adjacent to the road, RHS.</p> | By means of suitable portable measurement device.   | Second round of baseline monitoring measurements to be conducted before construction start. Then on a monthly basis during construction stage. | CSC   |
| Potential tree losses because tree item area is subject to embankment filling. | Trees located within the newly designed embankment.   | At respective tree locations.   | Inspections; observation. An embankment fill of up to 30 cm at the bottom of the tree stem area can be accepted. A filling up of more than 30 cm will damage the tree and cutting will be necessary. Decision is to be made by the construction supervision engineer. | During construction phase.   | CSC control by IPIG of MOTR                       |
| Top soil preservation  | Stockpiling and means of protection   | Job site  | Inspections; observation  | Upon preparation of the construction site, after stockpiling and after completion of works on shoulders  | CSC control by IPIG of MOTR                       |
| Equipment servicing and fuelling   | Prevention of spilling of oil and fuel  | Contractor's yard   | Inspections; observations   | Unannounced inspections during construction  | CSC control by IPIG of MOTR                       |
| Worker's safety and health   | Official approval for worker's camp; Availability of appropriate personal protective equipment; Organization of traffic on the construction site Provision of safety training to the staff according to the requirements of the individual work place | Job site and worker's camp  | Inspection; interviews; comparisons with the Contractor's method statement  | <p>Weekly site visits by the hired Health and safety expert.</p> <p>Unannounced inspections during construction and upon complaint.</p>        | CSC   |
| Worker's education on AIDS and STD   | Has relevant education been provided?   | To be determined by assigned Construction Supervision   | To be determined by assigned Construction Supervision   | After beginning of works and at appropriate intervals throughout construction  | CSC, local health units of the Ministry of health |
| Material supply Asphalt plant  | Possession of official approval or valid operation license  | Asphalt plant   | Inspection  | Before work begins   | CSC   |
| Borrow areas   | Possession of official approval or valid operation license  | Sand and gravel borrow pit and / or quarry  | Inspection  | Before work begins   | CSC control by IPIG of MOTR                       |
| Material transport   | Are the truck loads   | Job site / haul routes  | Supervision   | Unannounced  | CSC   |

|   |   |   |  |   |  |
|---|---|---|--|---|--|
| Asphalt   | covered or wetted;<br>Compliance with the Contractor's method statement (restricted working hours; haul routes) dust suppression methods where required |   |  | inspections during work   |  |
| Stone   |   | Job site / haul routes                            | Supervision spot checks  | Unannounced inspections during work   | CSC  |
| Sand and gravel   |   | Job site / haul routes                            | Supervision  | Unannounced inspections during work   | CSC  |
| Surface water protection watercourse Tugol-Say (148+874)                                | Contractor's compliance with his approved method statement  | Bridges and Culverts<br>1 bridge and 134 culverts | Inspection   | Unannounced inspections during bridge and culvert works                         | CSC, SAEPF   |
| Air pollution from improper maintenance equipment<br>Asphalt plant and Machinery        | Exhaust fumes, dust   | At site   | Measurement at asphalt and crushing plants.<br>Regular check certificate of vehicles and equipment.  | Unannounced inspections during construction works                               | CSC  |
| Planting of new road side trees   | Regular monitoring and control of successful growth of new planted trees  | At locations of new planted trees                 | Replanting of trees that have died   | Monitoring to be conducted in autumn so as to allow for replacement of failures | 1st Year, CSC, control by IPIG of MOTR   |
| <b>Operational stage</b>  |   |   |  |   |  |
| Increased road kills of domestic animals due to higher traffic loads and vehicle speeds | Road kills of animals   | Along the new road                                | Keep records of accidents.<br>In the case that accident hot spots with large mammals are identified, appropriate protective measures shall be elaborated (e.g. reflectors / local fencing, warning signs, speed reductions etc.) | Throughout the Year   | Regional Departments of State Road Administration (UAD, LUAD, and GDAD BO)                                       |
| Increased traffic volumes may increase possible spills of harmful substances            | Accidents that cause spills of harmful substances   | Along the new road                                | Counting of accidents  | Throughout the Year   | MOTR jointly with Road police service of the KR Ministry of home affairs and KR Ministry of emergency situations |
| Damaged drainage or uncontrolled erosion  | Leakages in drainage system and damages due to erosion  | Culverts and drainage facilities                  | Documentation  | Throughout the Year   | Local MOTR departments   |
| Tree maintenance along the road   | Maintenance of newly planted trees  | In locations of newly planted trees               |  | Throughout the Year   | Local MOTR departments joint with local authorities  |