

Project Administration Manual

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Loan Number: LXXXX
Grant Number: GXXXX

21 September 2016

Republic of Tajikistan: Central Asia Regional
Economic Cooperation Corridors 2, 5, and 6
(Dushanbe–Kurgonteppa) Road Project

ABBREVIATIONS

ADB	–	Asian Development Bank
ADF	–	Asian Development Fund
AFS	–	audited financial statements
CAREC	–	Central Asia Regional Economic Cooperation
CEFPF	–	Clean Energy Financing Partnership Facility
CEF	–	Clean Energy Fund
DMF	–	design and monitoring framework
EIRR	–	economic internal rate of return
EMP	–	environmental management plan
FMA	–	financial management assessment
IRI	–	international roughness index
IEE	–	initial environmental examination
km	–	kilometer
LARP	–	land acquisition and resettlement plan
MOT	–	Ministry of Transport
OFID	–	OPEC Fund for International Development
PAM	–	project administration manual
PIURR	–	project implementation unit for roads rehabilitation
PMCSC	–	project management and contract supervision consultant
PPTA	–	project preparatory technical assistance
RAMS	–	road asset management system
RRP	–	report and recommendations of the President
SDG	–	sustainable development goals
TOR	–	terms of reference

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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 the policies and procedures of the government and Asian Development Bank (ADB). 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 (MOT) of Republic of Tajikistan is wholly responsible for the implementation of ADB-financed projects, as agreed jointly between the Beneficiary and ADB, and in accordance with the policies and procedures of the government and ADB. ADB staff is responsible for supporting implementation including compliance by MOT of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At loan/grant negotiations, the Beneficiary 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/grant negotiations. In the event of any discrepancy or contradiction between the PAM and the financing agreement, the provisions of the financing agreement shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP), 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.

I. PROJECT DESCRIPTION

1. The government has requested ADB assistance to improve portions of CAREC corridors 2, 5, and 6 by upgrading the 82 km Dushanbe–Kurgonteppa road, for which ADB has programmed two projects in 2016 and 2018 as presented in the Tajikistan country operations business plan, 2016–2018. The project road passes through terrain that varies from flat to mountainous, and connects Dushanbe to Afghanistan. The first project will focus on improving an approximately 33 km section of the road from Dushanbe to Chashmasoron, hereinafter referred to as the project road. Financing of the second project, from Chashmasoron to Kurgonteppa, is envisaged to be considered through the additional financing modality.

2. Dushanbe is the capital and largest city in Tajikistan, with 775,000 residents. Kurgonteppa is the capital of the Khatlon region and the third-largest city in Tajikistan, with a population of about 100,000. Kurgonteppa is home to a number of industrial enterprises, universities, colleges, and hospitals. Except for a 3.4 km section immediately south of Dushanbe, the project road has two lanes, with few safety features. It could serve as a powerful engine for regional integration and inclusive economic growth, but this potential is limited by three factors: road capacity, condition, and safety. In addition, during the winter season when glacial melt is at its lowest and energy demand the highest, villages and facilities along the project area experience frequent energy cuts, which affect road safety, restrict economic activities, and increase domestic hardship, especially for women.

3. The project will support the government's program to progressively improve the road by (i) expanding its width from two to four lanes to address impending capacity constraints, (ii) improving its surface condition through construction of a new pavement, and (iii) providing well-designed safety facilities to address existing road safety deficiencies. The project will introduce clean energy technologies—such as solar street lighting and solar-based backup systems—to enhance power reliability and efficiency along the project road. This will contribute to improved living standards in the villages along the project road, and to reduced carbon dioxide emissions. The project will also develop guidelines on safe arterial road design and initiate the development of a tailored road asset management system, with a view to incrementally strengthening MOT capacity in these areas. This approach will support a continued policy dialogue that will run parallel with progressive improvement of the road, and will be closely coordinated with other development partners active in the transport sector.

4. **Impacts, Outcome and Outputs.** The project will be aligned with the following impacts: (i) the strategic pillar on promotion of economic growth of the Tajikistan National Development Strategy; (ii) CAREC's strategic goal of establishing competitive corridors across the CAREC region; and (iii) targets 3.6 (road safety) and 9.1 (sustainable infrastructure) of the Sustainable Development Goals. The outcome will be improved efficiency and safer movement of goods and people on selected sections of the Dushanbe to Kurgonteppa road. The outputs will be (i) improved road conditions, facilities, and safety along, and in the vicinity of, the project road; (ii) strengthened institutional capacity of MOT regarding financial management, road safety, and road asset management; and (iii) completed procurement readiness for the next section of the road to be improved, from Chashmasoron to Kurgonteppa.

II. IMPLEMENTATION PLANS

A. Project Readiness Activities

Table 1: Project Readiness Activities

Indicative Activities	2016						2017			Responsible Individual/Unit/Agency/ Government
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	
1. Advance contracting actions										MOT and ADB
a. Project Management and Construction Supervision Consultant										MOT and ADB
<i>(i) Short-listing</i>		✓								
<i>(ii) Contract award</i>								✓		
b. Civil Works (ICB)										MOT and ADB
<i>(i) Invitation to bid</i>				✓						
<i>(ii) Contract award</i>									✓	
2. Approval of bidding documents				✓						MOT and ADB
3. Approval of safeguards documents		✓								Government, MOT and ADB
4. Government budget inclusion						✓				MOF
5. ADB Board approval					✓					ADB
6. Government resolution provided						✓				Government
7. Loan signing of financing and grant agreements							✓			Government and ADB
8. Government legal opinion provided							✓			Government
9. Loan and grant effectiveness								✓		Government and ADB

Source: Asian Development Bank estimates

B. Overall Project Implementation Plan

5. A Gantt chart recording outputs with key implementation activities on a quarterly basis will be updated annually and submitted to ADB with contract and disbursement projections for the following year.

Table 2: Overall Project Implementation Plan

Activities	2017				2018				2019				2020				2021			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4												
A. Design and Monitoring Framework																				
Output 1: Improved road conditions, facilities, and safety between along, and in the vicinity of, the project road																← DLP →				
1.1 PMSCC contract awarded and completed																				
1.2 Civil works contract awarded and completed																				
1.3 Road safety audits completed																				
1.4 Contract for goods awarded and completed																				
Output 2: Strengthened institutional capacities of MOT on financial management, road safety and road asset management																				
2.1 Guidelines on safe arterial roads design developed and disseminated																				
2.2 RAMS framework developed and disseminated																				
2.3 Financial management system and procedures developed and MOT staff trained																				
Output 3: Completed advance procurement action for the next road section to be improved																				
3.1 Bidding documents developed																				
3.2 Contracts procured																				
B. Management Activities																				
Project mid-term review																				
Safeguards monitoring reports (semi-annual)																				
Project completion report																				

DLP = Defects Liability Period, LARP = land acquisition and resettlement plan, PMSCC = Project management and contract supervision contract, Q = quarter, RAMS = Road Asset Management System
Source: Asian Development Bank estimates

III. PROJECT MANAGEMENT ARRANGEMENTS

A. Project Implementation Organizations: Roles and Responsibilities

Table 3: Project Management Roles and Responsibilities

Project Implementation Organizations	Management Roles and Responsibilities
<p>Executing agency: Ministry of Transport</p>	<ul style="list-style-type: none"> ▪ Overall project oversight; ▪ Ensure compliance with all loan covenants and ADB's guidelines, procedures, and policies; ▪ Coordinate with all ministries and agencies involved in the project as appropriate; ▪ Ensure timely provision of counterpart funds for project activities; ▪ Ensure that the PIURR is adequately staffed and functional during the entire period of project implementation; ▪ Recruit and supervise consultants and contractors, including approval of contract variations, suspension and termination of contracts; ▪ Bid evaluation and contract signing; ▪ Establish adequate financial management system and submit timely withdrawal applications to ADB; ▪ Conduct timely financial audits as per agreed timeframe and take recommended actions; ▪ Collect and retain all supporting and reporting documents, including annual audit reports and financial statements; ▪ Involve beneficiaries and civil society representatives in all stages of project design and implementation as appropriate; ▪ Regularly post on MOT website the updated project information documents for public disclosure, including safeguards documents, in consultation with ADB; and ▪ Ensure project's post-implementation sustainability and report to ADB on the impacts of the project.
<p>Implementing agency: Project Implementation Unit for Roads Rehabilitation</p>	<ul style="list-style-type: none"> ▪ Act as focal point for communication with ADB on project related matters; ▪ Finalize bidding documents, manage recruitment of consultants and procurement of contractors, and finalize contract awards; ▪ Monitor and evaluate project activities and outputs, including periodic review and preparation of review reports identifying issues and action plans; ▪ Prepare regular periodic progress reports, and the project completion report, and ensure their timely submission to ADB; ▪ Assist ADB project review missions; and ▪ Provide necessary office space, equipment, and facilities.
<p>Ministry of Finance</p>	<ul style="list-style-type: none"> ▪ Sign the project financing agreement;

	<ul style="list-style-type: none"> ▪ Provide documents and other requirements for loan effectiveness; ▪ Timely allocate and release counterpart funds; ▪ Monitor the project implementation and provide appropriate coordination and support; ▪ Provide ADB with details of the authorized staff with specimen signatures for withdrawal applications processing; ▪ Request extensions of the loan closing date if any; and ▪ Process and submit to ADB any request, when required, for reallocating the loan proceeds.
Asian Development Bank	<ul style="list-style-type: none"> ▪ Assist MOT in recruiting the Project Management and Contract Supervision Consultant (PMCSC); ▪ Assist MOT and PMCSC in providing timely guidance at each stage of project implementation in accordance with agreed implementation arrangements; ▪ Review all documents that require ADB approval; ▪ Conduct an inception mission, periodic loan review missions, a mid-term review, and a project completion mission; ▪ Monitor compliance with all loan covenants; ▪ Monitor compliance with financial audit recommendations; ▪ Timely process withdrawal applications and release eligible funds; ▪ Regularly update ADB's project performance review reports with assistance from MOT; and ▪ Regularly post on ADB website the updated project information documents for public disclosure, including safeguards documents as per disclosure provision of the ADB Safeguard Policy Statement (2009).

ADB = Asian Development Bank, PMCSC = Project management and contract supervision consultant, MOT = Ministry of Transport, PIURR = Project Implementation Unit for Roads Rehabilitation
Source: Asian Development Bank.

B. Key Persons Involved in Implementation

6. The executing agency officer and ADB division director and mission leader are as below.

Executing Agency

Ministry of Transport

Mr. Ganjalzoda Sherali Rahmon
Minister of Transport
Telephone: xx
14 Ayni Street, Dushanbe, Tajikistan

Project Implementation Unit

Mr. N. S. Arabzoda
Executive Director
Telephone: +992 372 21 20 73
Email address: piurr@bk.ru
14 Ayni Street, Dushanbe, Tajikistan

Division Director

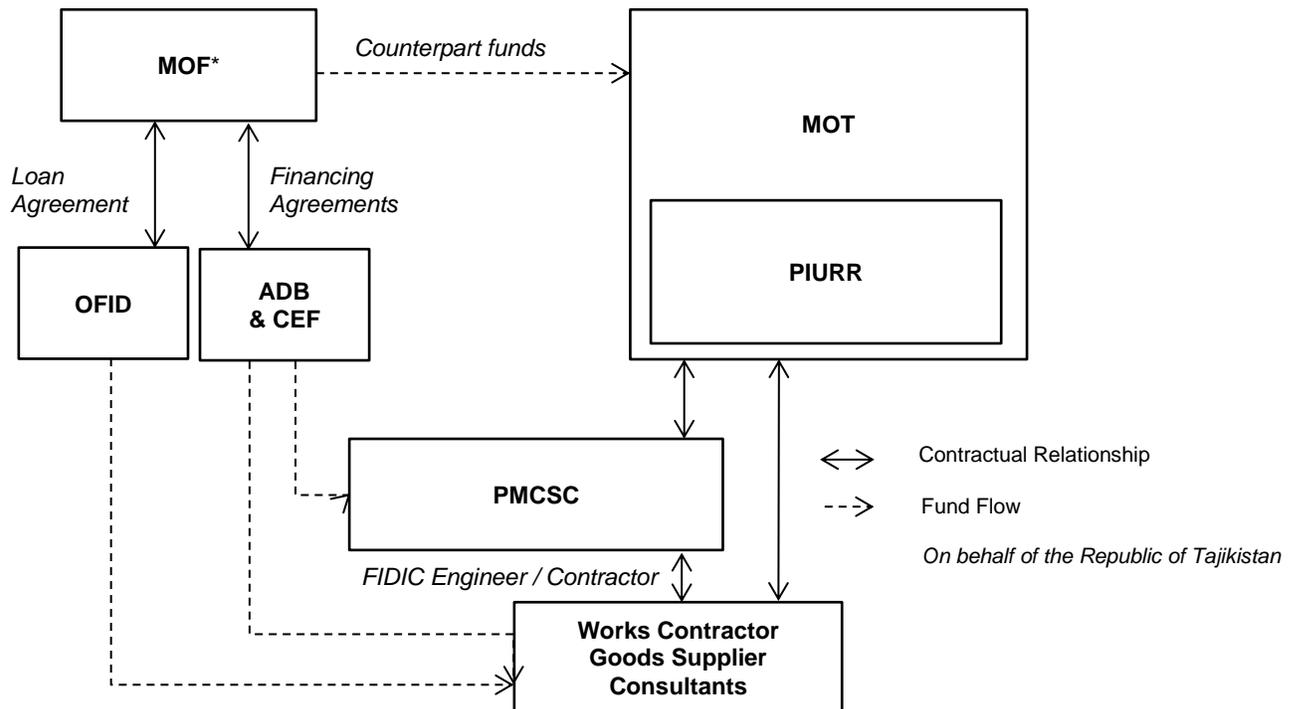
Ms. Xiaohong Yang
 Director, Transport and Communications Division (CWTC)
 Telephone: +63 2 632 6765
 Fax: +63 2 636 2428
 Email address: xyang@adb.org
 6 ADB Avenue, Mandaluyong City, 1550 Metro Manila,
 Philippines

Mission Leader

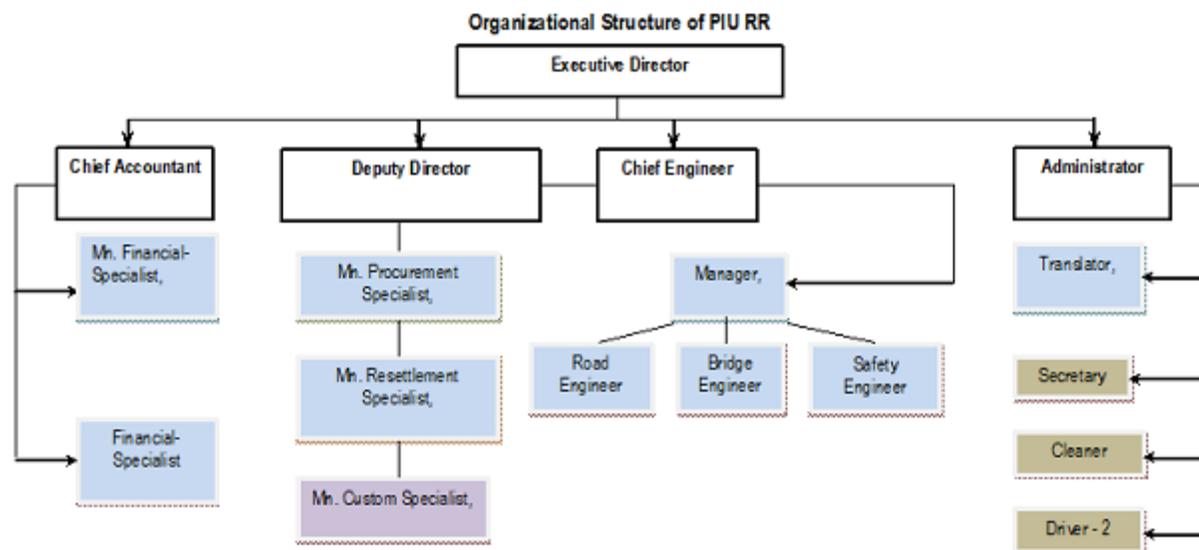
Mr. Kamel Bouhmad
 Transport Specialist, Central and West Asia Department
 Telephone: +63 2 632 4664
 Email address: kbouhmad@adb.org
 6 ADB Avenue, Mandaluyong City, 1550 Metro Manila,
 Philippines

C. Project Organization Structure

7. The Ministry of Transport (MOT) will be the executing agency. The MOT's Project Implementation Unit for Roads Rehabilitation (PIURR) will be the implementing agency. The PIURR will be assisted during project implementation by relevant departments of the Ministry of Transport, the project management and contract supervision consultant (PMSCS), and relevant government agencies. The project outline organization chart and the PIURR organizational structure are shown below.



ADB = Asian Development Bank, CEF = Clean Energy Fund, MOF = Ministry of Finance, MOT = Ministry of Transport, OFID = OPEC Fund for International Development, PMSCS = Project management and contract supervision consultant, PIURR = Project Implementation Unit for Roads.



IV. COSTS AND FINANCING

A. Cost Estimates Preparation and Revisions

8. The cost estimates have been prepared in July 2016 by the project preparatory technical assistance (PPTA) consultant based on market prices for consulting services and civil works. The cost estimates will be updated upon finalization of the feasibility study and engineering design in September 2016.

B. Key Assumptions

9. The following key assumptions underpin the cost estimates and financing plan:

- (i) Exchange rate: TJS 7.87 = \$1.00 (as of 30 July 2016).
- (ii) Price contingencies based on expected cumulative inflation over the implementation period as follows:

Table 4: Escalation Rates for Price Contingency Calculation
Escalation Rates for Price Contingency Calculation

Item	2017	2018	2019	2020	2021	Average
Foreign rate of price inflation	1.4%	1.5%	1.5%	1.5%	1.5%	1.5%
Domestic rate of price inflation	7.5%	7.0%	6.0%	6.0%	n/a	6.6%

Sources: World Bank estimates (foreign rate), Asian Development Bank estimates (domestic rate)

10. The project is estimated to cost about \$96.4 million. The project is estimated to be completed by 30 September 2021.

11. The government has requested (i) a loan in various currencies equivalent to SDR35,289,000; and (ii) a grant not exceeding \$15.8 million, both from ADB's Special Funds resources, 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.

12. The government has also requested the OPEC Fund for International Development (OFID) to provide a loan of \$12.0 million, which will finance exclusively a part of the civil works of the project road. The OFID loan will have a 20-year term including a grace period of 5 years, and an interest rate of 2.75% per annum inclusive of a 1.0% service charge. ADB and OFID will cofinance the civil works of the project as collaborative cofinancing. ADB will not be administering the OFID loan and each cofinancier will manage, in close coordination, its own pro-rata share of disbursements for civil works related payments.

13. In addition, there will be a \$2.0 million grant from the CEF¹ to integrate clean energy and energy efficiency technologies for street lighting and power back-up systems for communities living adjacent to the project road. This grant will also finance lighting improvement in the Ozodi tunnel on the Dushanbe–Dangara road to ensure that lighting is available on a 24-hours basis. ADB will fully administer the CEF grant on a parallel cofinancing basis. By virtue of the CEF cofinancing, universal procurement will generally apply to procurement and consulting services packages to be financed under the project². The government will provide counterpart funding of \$17.2 million equivalent to cover taxes and duties, land acquisition and resettlement costs, incremental administrative expenses, and other miscellaneous costs.

¹ Financing partners: the governments of Australia, Norway, Spain, Sweden, and the United Kingdom.

² ADB. 2013. *Blanket Waiver of Member Country Procurement Eligibility Restrictions in Cases of Cofinancing for Operations Financed from Asian Development Fund Resources*. Manila.

C. Detailed Cost Estimates by Expenditure Category

Table 5: Detailed Cost Estimates by Expenditure Category
(\$ million)

Item	Foreign Exchange	Local Currency	Total Cost	% of Total Base Cost
A. Base Costs^a				
1. Civil works ^b	43.95	29.30	73.25	90.3%
2. Equipment	1.89	0.00	1.89	2.3%
3. Land acquisition and resettlement	0.00	0.80	0.80	1.0%
4. Consulting services ^c	2.84	1.88	4.72	5.8%
5. Incremental administrative expenses	0.00	0.40	0.50	0.6%
Subtotal (A)	48.68	32.48	81.16	100%
B. Contingencies^d				
1. Physical	4.73	3.15	7.88	9.7%
2. Price	1.85	2.77	4.62	5.7%
Subtotal (B)	6.58	5.92	12.50	15.5%
C. Financial Charges During Implementation				
1. Interest during construction ^e	2.72	0.00	2.72	3.4%
Subtotal (C)	2.72	0.00	2.72	3.4%
Total Project Cost (A+B+C)	57.98	38.40	96.38	

^a In mid-2016 prices.

^b Includes costs for utilities relocation (water, gas, power and telecommunications).

^c Includes estimated audit fees of \$90,000 for the audit of the annual project financial statements for the period 2017–2021 to be financed from ADB's loan resources (\$50,000) and CEF's grant resources (\$40,000).

^d Physical contingencies computed at 10% for civil works and equipment, and 5% for consulting services. Price contingencies computed at 1.5% on foreign exchange costs and 6.6% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

^e Interest during construction for the ADB loan (\$1.6 million) has been computed on Asian Development Fund rates at 1% per year during the project implementation period. Interest during construction for the OFID loan (\$1.1 million) has been computed at 2.75% per year during the project implementation period. The interest charges of the ADB loan will be capitalized.

Source: Asian Development Bank estimates.

Notes: Numbers may not sum precisely because of rounding.

D. Allocation and Withdrawal of Loans and Grants Proceeds

Table 6a: Allocation and Withdrawal of ADB Loan Proceeds

No.	Item	Category		Percentage and Basis for Withdrawal from the Loan Account
		Category	Subcategory	
1.	Civil works*	34,280,000		80.7% of total expenditure claimed**
2.	Consulting services	3,850,000		100.0% of total expenditure claimed**
3.	Interest during construction	1,630,000		100.0% of amounts due
4.	Unallocated ^a	9,640,000		
	Total	49,400,000		

* Financing allocated to this item under the ADB grant will be utilized first at 80.7% of every claim until it has been disbursed in full. Thereafter, financing allocated to this item under the ADB loan will be utilized at 80.7% of every claim.

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

^a Includes physical and price contingencies for civil works and consulting services.

Source: Asian Development Bank staff estimates

Table 6b: Allocation and Withdrawal of ADB Grant Proceeds

No.	Item	Category		Percentage and Basis for Withdrawal from the Grant Account
		Amount (\$)		
		Category	Subcategory	
1.	Civil works*	15,800,000		80.7% of total expenditure claimed**
	Total	15,800,000		

* Financing allocated to this item under the ADB grant will be utilized first at 80.7% of every claim until it has been disbursed in full. Thereafter, financing allocated to this item under the ADB loan will be utilized at 80.7% of every claim.

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

Source: Asian Development Bank staff estimates

Table 6c: Allocation and Withdrawal of OFID Loan Proceeds

No.	Item	Category		Percentage and Basis for Withdrawal from the Grant Account
		Amount (\$)		
		Category	Subcategory	
1.	Civil works	12,000,000		19.3% of total expenditure claimed*
	Total	12,000,000		

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

Source: Asian Development Bank staff estimates

Table 6d: Allocation and Withdrawal of CEF Grant Proceeds

No.	Item	Category		Percentage and Basis for Withdrawal from the Loan Account
		Amount (\$)		
		Category	Subcategory	
1.	Equipment	1,600,000		100.0% of total expenditure claimed*
2.	Consulting services	150,000		100.0% of total expenditure claimed*
3.	Unallocated ^a	250,000		
	Total	2,000,000		

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

^a Includes physical and price contingencies for equipment and consulting services.

Source: Asian Development Bank staff estimates

E. Detailed Cost Estimates by Financier

Table 7: Detailed Cost Estimates by Financier
(\$ million)

Item	ADB (loan)		ADB (grant)		CEF (grant)		OFID (loan)		Government Amount (taxes and duties)		Total Cost	
	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount (costs)	% of Cost Category		
A. Base Costs^a												
1. Civil works ^b	34.28	46.8%	15.80	21.6%	-	-	12.00	16.4%	0.00	11.17	15.2%	73.25
2. Equipment	-	-	-	-	1.60	-	-	-	0.00	0.29	15.3%	1.89
3. Land acquisition and resettlement	-	-	-	-	-	-	-	-	0.80	0.00	100.0%	0.80
4. Consulting services ^c									0.00	0.72	15.3%	4.72
a. ADB	3.85	81.6%										
b. CEF					0.15	3.2%						
5. Incremental administrative expenses	-	-	-	-	-	-	-	-	0.50	0.00	100.0%	0.50
Subtotal (A)	38.13	47.0%	15.80	19.5%	1.75	2.2%	12.00	14.8%	1.30	12.18	16.6%	81.16
B. Contingencies^d	9.64	77.1%	-	-	0.25	2.0%	-	-	0.46	2.15	20.9%	12.50
C. Financial Charges During Implementation^e	1.63	59.9%	-	-	-	-	-	-	1.09	0.00	40.1%	2.72
Total Project Cost (A+B+C)	49.40	51.3%	15.80	16.4%	2.00	2.1%	12.00	12.5%	2.85	14.33	17.8%	96.38

^a In mid-2016 prices.

^b Includes costs for utilities relocation (water, gas, power and telecommunications).

^c Includes estimated audit fees of \$90,000 for the audit of the annual project financial statements for the period 2017–2021 to be financed from ADB's loan resources (\$50,000) and CEF's grant resources (\$40,000).

^d Physical contingencies computed at 10% for civil works and equipment, and 5% for consulting services. Price contingencies computed at 1.5% on foreign exchange costs and 6.6% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

^e Interest during construction for the ADB loan (\$1.6 million) has been computed on Asian Development Fund rates at 1% per year during the project implementation period. Interest during construction for the OFID loan (\$1.1 million) has been computed at 2.75% per year during the project implementation period. The interest charges of ADB loan will be capitalized.

Source: Asian Development Bank estimates.

F. Detailed Cost Estimates by Outputs

Table 8: Detailed Cost Estimates by Outputs
(\$ million)

Item	Total Cost	Output 1: Improvement of road conditions, facilities, and safety			Output 2: Institutional strengthening of MOT		Output 3: Procurement readiness for next project road section	
		Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	
A. Base Costs^a								
1. Civil works ^b	73.25	73.25	100.0%	0.00	0.0%	0.00	0.0%	
2. Equipment	1.89	1.89	100.0%	0.00	0.0%	0.00	0.0%	
3. Land acquisition and resettlement	0.80	0.80	100.0%	0.00	0.0%	0.00	0.0%	
4. Consulting services ^c	4.72	2.83	60.0%	1.65	35.0%	0.24	5.0%	
5. Incremental administrative expenses	0.40	0.30	60.0%	0.18	35.0%	0.02	5.0%	
Subtotal (A)	81.16	79.07	97.5%	1.83	2.3%	0.26	0.3%	
B. Contingencies^d								
1. Physical	7.88	7.63	96.8%	0.23	2.9%	0.02	0.3%	
2. Price	4.62	4.47	96.8%	0.13	2.9%	0.01	0.3%	
Subtotal (B)	12.50	12.10	96.8%	0.36	2.9%	0.04	0.3%	
C. Financial Charges During Implementation^e								
1. Interest during construction	2.72	2.72	100.0%	0.00	0.0%	0.00	0.0%	
Subtotal (C)	2.72	2.72	100.0%	0.00	0.0%	0.00	0.0%	
Total Project Cost (A+B+C)	96.38	93.89	97.4%	2.19	2.3%	0.30	0.3%	

^a In mid-2016 prices.

^b Includes costs for utilities relocation (water, gas, power and telecommunications).

^c Includes estimated audit fees of \$90,000 for the audit of the annual project financial statements for the period 2017–2021 to be financed from ADB's loan resources (\$50,000) and CEF's grant resources (\$40,000).

^d Physical contingencies computed at 10% for civil works and equipment, and 5% for consulting services. Price contingencies computed at 1.5% on foreign exchange costs and 6.6% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

^e Interest during construction for the ADB loan (\$1.6 million) has been computed on Asian Development Fund rates at 1% per year during the project implementation period. Interest during construction for the OFID loan (\$1.1 million) has been computed at 2.75% per year during the project implementation period. The interest charges of ADB loan will be capitalized.

Source: Asian Development Bank estimates.

Notes: Numbers may not sum precisely because of rounding.

G. Detailed Cost Estimates by Year

Table 9: Detailed Cost Estimates by Year
(\$ million)

Item	Total Cost	2017	2018	2019	2020	2021
A. Base Costs^a						
1. Civil works ^b	73.25	10.99	21.98	21.98	14.65	3.66
2. Equipment	1.89	0.28	0.57	0.57	0.38	0.09
3. Land acquisition and resettlement	0.80	0.80	0.00	0.00	0.00	0.00
4. Consulting services ^c	4.72	0.71	1.42	1.42	0.94	0.24
5. Incremental administrative expenses	0.50	0.1	0.1	0.1	0.1	0.1
Subtotal (A)	81.16	12.88	24.06	24.06	16.07	4.09
B. Contingencies^d	12.50	1.88	3.75	3.75	2.50	0.63
C. Financial Charges During Implementation^e	2.72	0.12	0.37	0.62	0.78	0.82
Total Project Cost (A+B+C)	96.38	14.88	28.18	28.43	19.36	5.54
% Total Project Cost	100%	15.4%	29.2%	29.5%	20.1%	5.8%

^a In mid-2016 prices.

^b Includes costs for utilities relocation (water, gas, power and telecommunications).

^c Includes estimated audit fees of \$90,000 for the audit of the annual project financial statements for the period 2017–2021 to be financed from ADB's loan resources (\$50,000) and CEF's grant resources (\$40,000).

^d Physical contingencies computed at 10% for civil works and equipment, and 5% for consulting services. Price contingencies computed at 1.5% on foreign exchange costs and 6.6% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

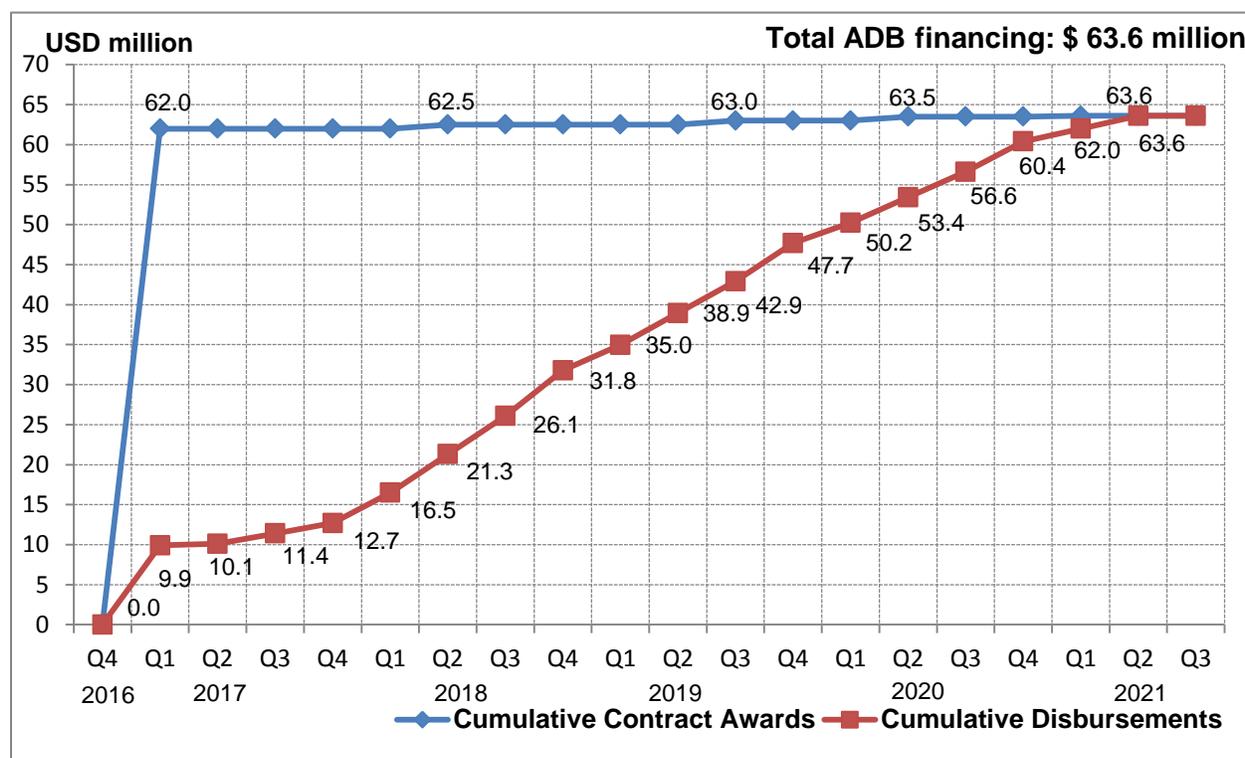
^e Interest during construction for the ADB loan (\$1.6 million) has been computed on Asian Development Fund rates at 1% per year during the project implementation period. Interest during construction for the OFID loan (\$1.1 million) has been computed at 2.75% per year during the project implementation period. The interest charges of ADB loan will be capitalized.

Source: Asian Development Bank estimates.

Notes: Numbers may not sum precisely because of rounding.

H. Contract and Disbursement S-Curve

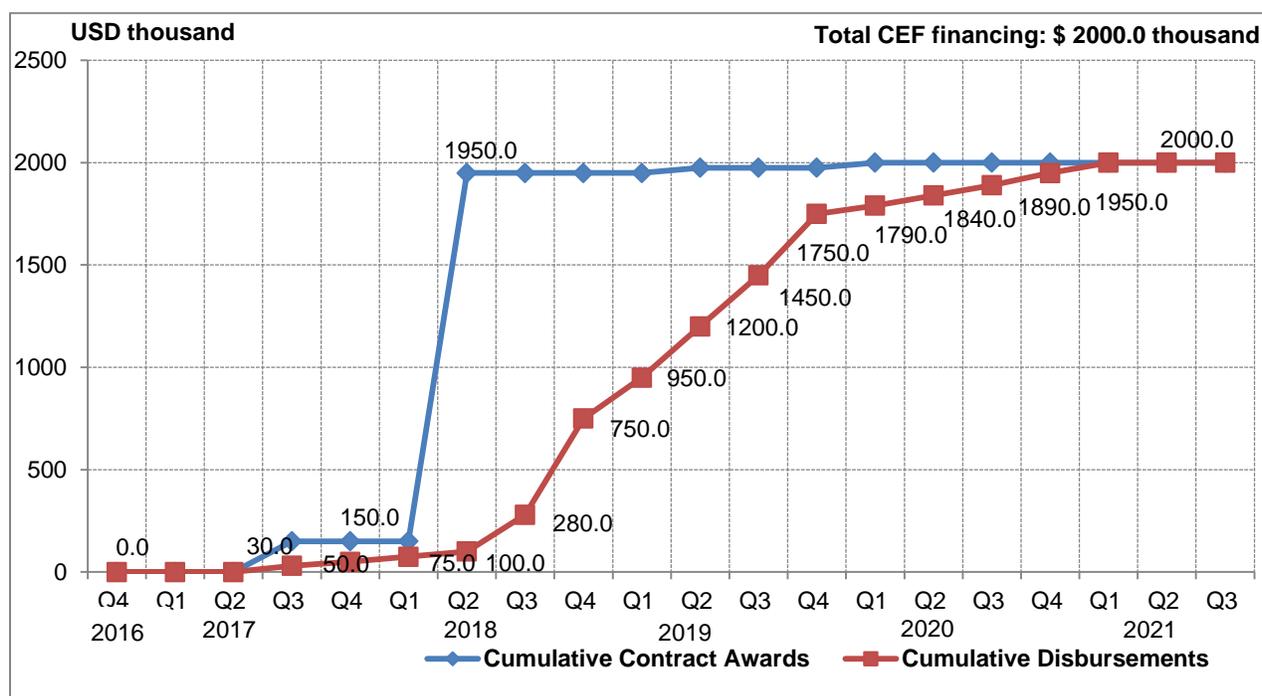
14. The below graphs show quarterly contract awards and disbursement projections over the life of the project. The S-curves are only for ADB financing and CEF financing that is administered by ADB. Counterpart funds and OFID financing are not considered. The projection for contract awards includes contingencies and unallocated amounts, but excludes interest during construction. The ADB grant will be utilized first at 80.7% of every claim until it has been disbursed in full. Thereafter, the ADB loan will be utilized at 80.7% of every claim.



Source: Asian Development Bank estimates.

ADB Grant										
	Contract Awards (\$ million)					Disbursements (\$ million)				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2017	15.0	0.0	0.0	0.0	15.0	9.9	0.2	1.3	1.3	12.7
2018	0.0	0.1	0.0	0.0	0.1	2.7	0.0	0.0	0.0	2.7
2019	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2020	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2021	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total					15.4					15.4

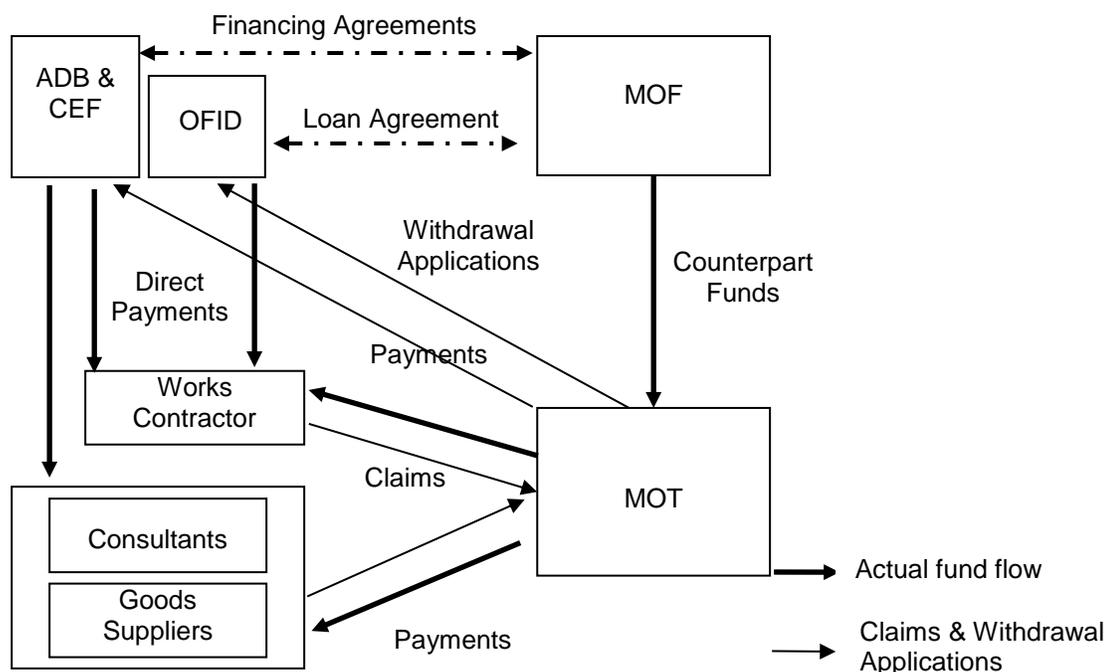
ADB Loan										
	Contract Awards (\$ million)					Disbursements (\$ million)				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2017	47.0	0.0	0.0	0.0	47.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.4	0.0	0.0	0.4	1.1	4.8	4.8	5.7	16.4
2019	0.0	0.0	0.4	0.0	0.4	3.2	4.0	4.0	4.8	15.9
2020	0.0	0.4	0.0	0.0	0.4	2.5	3.2	3.2	3.8	12.7
2021	0.1	0.0	0.0	0.0	0.1	1.6	1.6	0.0	0.0	3.2
Total					48.2					48.2



Source: Asian Development Bank estimates.

CEF Grant										
	Contract Awards (\$ thousand)					Disbursements (\$ thousand)				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2017	0.0	0.0	150.0	0.0	150.0	0.0	0.0	30.0	20.0	50.0
2018	0.0	1800.0	0.0	0.0	1800.0	25.0	25.0	180.0	470.0	700.0
2019	0.0	25.0	0.1	0.0	25.0	200.0	250.0	250.0	300.0	1000.0
2020	25.0	0.1	0.0	0.0	25.0	40.0	50.0	50.0	60.0	200.0
2021	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	50.0
Total					2000.0					2000.0

I. Fund Flow Diagram



ADB = Asian Development Bank, CEF = Clean Energy Fund, MOF = Ministry of Finance, MOT = Ministry of Transport, OFID = OPEC Fund for International Development

V. FINANCIAL MANAGEMENT

A. Financial Management Assessment

15. The financial management assessment (FMA) was conducted in June 2016 in accordance with ADB's Guidelines for the Financial Management and Analysis of Projects and the Financial Due Diligence: A Methodology Note. The FMA considered the capacity of MOT's Project Implementation Unit for Road Rehabilitation (PIURR), including funds-flow arrangements, staffing, accounting and financial reporting systems, financial information systems, and internal and external auditing arrangements. Based on the assessment, the key financial management risks identified were: (i) lack of accountability in reporting and monitoring systems; (ii) inadequate procedure for online payments; (iii) weak financial capacity of the bank used by PIURR; (iv) incomplete implementation of automated financial reporting systems; (v) inappropriate information and records management system; and (vi) lack of supervision by MOT's internal control audit. It is concluded that the overall premitigation financial management risk of the implementing agency is substantial. The Beneficiary and PIURR have agreed to implement an action plan as key measures to address the deficiencies. The financial management action plan is provided in Table 10.

Table 10: Financial Management Action Plan

Key risks identified	Risk-mitigation measures	Staff and/or personnel responsible	Timeline
Lack of accountability in reporting and monitoring systems (H)	Develop and implement a simple operations manual for the PIURR, with job descriptions and responsibilities for each major position.	PIURR and PMCSC's financial management specialist	By Q2 2017
Inadequate procedure for online payments (M)	Amend the approach used for bank transfers through the project bank accounts' online transfer facility to ensure integrity of transactions.	PIURR	By Q2 2017
Weak financial capacity of the bank being used by the PIURR (L)	Monitor with MOF the capacity of Agroinvestbank, the bank being used by the PIURR for imprest and other accounts and, if necessary, consider using another bank.	MOF, MOT and PIURR	Entire duration of the project
Incomplete implementation of automated financial reporting systems (M)	Complete implementation of the 1C business suite application, in particular its accounting modules and apply this to all new projects, including the proposed project.	PIURR and PMCSC's financial management specialist	Entire duration of the project
Weak information and records management system (M)	Develop an information technology and business continuity strategy, with PMCSC's assistance, to include converting all documentation into electronic format, putting in place onsite and offsite backup systems, and establishing an entity email system to allow effective audit of communications, as appropriate.	PIURR and PMCSC's financial management specialist and Head office	Entire duration of the project
Lack of supervision by MOT's internal control audit (M)	Bring the PIURR within the scope of MOT's internal audit process, in consultation with MOT and MOF, if appropriate, with MOT increasing the staffing and other resources in the internal audit unit to accommodate this.	MOF, MOT and PIURR	Entire duration of the project

Risks Assessment: H = High, S = Substantial, M = Moderate, L = Low

ADB = Asian Development Bank, PMCSC = project management and construction supervision consultant, MOT = Ministry of Transport, PIURR = Project Implementation Unit for Roads Rehabilitation

B. Disbursement

(i) Disbursement Arrangements for ADB and ADB-administered CEF Funds

16. The loan and grant proceeds including ADB-administered CEF funds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time), and detailed arrangements agreed upon between the government and ADB. Online training for project staff on disbursement policies and procedures is available.³

17. **Direct Payment and Reimbursement Procedure.** Disbursements from the loan and grant will be generally through direct payment procedure where ADB makes direct payment to supplier, contractor, or consultant on the basis of a withdrawal application, in accordance with the Loan Disbursement Handbook. No imprest account will be established under the project. The minimum value per withdrawal application is set in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time). Individual payments below this amount will be paid by the MOT and subsequently reimbursed from ADB, unless otherwise accepted by ADB.

18. Before the submission of the first withdrawal application, the Beneficiary submits to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the government, together with the authenticated specimen signatures of each authorized person.

19. The MOT, assisted by the PMCSC, will be responsible for (i) preparing disbursement projections, (ii) requesting budgetary allocations for counterpart funds and other necessary approvals from the Ministry of Finance and ADB, (iii) collecting and maintaining supporting documents, and (iv) preparing and sending withdrawal applications to ADB.

20. **Conditions for disbursement:** (i) an appropriate legislation, decree and/or resolution duly enacted to provide effective and enforceable exemption from taxes, duties and similar mandatory payments that accrue on project expenditures in Tajikistan (including, without limitation, for consulting services) or the government's allocation of budgetary funds to MOT sufficient to bear the cost of such taxes, duties and similar mandatory payments; (ii) government's allocation of adequate funds and resources to MOT for the implementation of the land acquisition and resettlement plan for the project (only for the civil works category).

(ii) Disbursement Arrangements for Counterpart Funds

21. Government financing covers taxes and duties exemptions, land acquisition and resettlement costs, incremental administrative expenses, and other miscellaneous costs and will be carried out in accordance with regulations of the Republic of Tajikistan relevant to co-financing arrangements made with multilateral financing organizations. MOT will open and maintain a separate account for government counterpart funds.

C. Accounting

22. The MOT will maintain separate books and records by funding source for all expenditures incurred on the project following accrual-based accounting following the International Financial Reporting Standards or the equivalent national accounting standards.

³ Disbursement eLearning. http://wpqr4.adb.org/disbursement_elearning

The MOT will prepare project financial statements in accordance with the government's accounting laws and regulations which are consistent with international accounting principles and practices.

D. Auditing and Public Disclosure

23. The MOT will cause the detailed project financial statements to be audited in accordance with accounting principles acceptable to ADB, by an independent auditor acceptable to ADB. The audited project financial statements together with the auditor's opinion will be presented in the English language to ADB within 6 months from the end of the fiscal year by the MOT.

24. The audit report for the project financial statements will include a management letter and auditor's opinions, which cover (i) whether the project financial statements present an accurate and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting standards; (ii) whether the proceeds of the {loan} {grant} were used only for the purpose(s) of the project; and (iii) whether the Beneficiary or executing agency was in compliance with the financial covenants contained in the legal agreements (where applicable).

25. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

26. The government, the MOT and PIURR have been made aware of ADB's approach to delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements.⁴ ADB reserves the right to require a change in the auditor, or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

27. Public disclosure of the project financial statements, including the audit report on the project financial statements, will be guided by ADB's Public Communications Policy 2011.⁵ After the review, ADB will disclose the audited project financial statements and the opinion of the auditors on the project financial statements no later than 14 days of ADB's confirmation of its acceptability by posting them on ADB's website. The management letter and additional auditor's opinions will not be disclosed.⁶

⁴ ADB's approach and procedures regarding delayed submission of audited project financial statements:

- (i) When audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (a) the audit documents are overdue; and (b) if they are not received within the next 6 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.
- (ii) When audited project financial statements are not received within 6 months after the due date, ADB will withhold processing of requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters. ADB will (a) inform the executing agency of ADB's actions; and (b) advise that the loan may be suspended if the audit documents are not received within the next 6 months.
- (iii) When audited project financial statements are not received within 12 months after the due date, ADB may suspend the loan.

⁵ Public Communications Policy: <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>

⁶ This type of information would generally fall under public communications policy exceptions to disclosure. ADB. 2011. *Public Communications Policy*. Paragraph 97(iv) and/or 97(v).

VI. PROCUREMENT AND CONSULTING SERVICES

A. Advance Contracting

28. All advance contracting will be undertaken in accordance with ADB Procurement Guidelines (2015, as amended from time to time) and ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). The issuance of invitations to bid under advance contracting will be subject to ADB approval. The Beneficiary, the MOT, and the PIURR have been advised that approval of advance contracting does not commit ADB to finance the project.

29. **Advance contracting.** Two contracts will be procured through advance contracting: (i) one civil works contract for road improvement, and (ii) one consulting services contract for project management and contract supervision. For the former, the steps to be concluded in advance include tendering, bid evaluation, and contract negotiations. For the latter, the steps to be undertaken in advance include shortlisting of consultants, issuing request for proposals, evaluation of proposals, and contract negotiations.

B. Procurement of Goods, Works, and Consulting Services

30. All procurement of goods and works will be undertaken in accordance with ADB's Procurement Guidelines (2015, as amended from time to time).

31. International competitive bidding procedures will be used for civil works contracts estimated to cost \$3 million or more, and supply contracts valued at \$2 million or higher. Shopping will be used for contracts for procurement of works and equipment worth less than \$100,000.

32. All consultants including nongovernment organizations, if any, will be recruited according to ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).⁷

C. Procurement Plan

33. An 18-month procurement plan indicating threshold and review procedures, works, goods, and consulting services contract packages and national competitive bidding guidelines is in **Appendix 1**. The Procurement Plan will be updated regularly by PIURR whenever there is a change in any of the contract packages and whenever a contract is awarded and completed.

D. Consultant's Terms of Reference

34. The MOT will engage international and national consultants for (i) project management and contract supervision (PMSCS), (ii) capacity building and support for procurement of equipment, and (iii) project auditing.

35. An estimated 557 person-months (111 international and 438 national) of consulting services are required for the PMSCS contract. The PMSCS will be engaged using the quality- and cost-based selection (QCBS) method with a standard quality–cost ratio of 90:10 and

⁷ 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/>

submission of full technical proposals. Two individuals (one international and one national) will be recruited to support the PIURR in preparing procurement documentation and providing procurement support for the supply of the project's solar power systems. The outline terms of reference for both consulting services are in **Appendix 2**.

VII. SAFEGUARDS

36. **Environment.** The project is classified as category B for environment impacts. An initial environmental examination (IEE) was prepared by the PPTA consultants and will be disclosed on the ADB website upon approval, in accordance with ADB's SPS (2009). The environmental assessment established that the project can have site-specific environmental impacts related to air and water pollution, noise and vibration, landslide-prone areas, loss of road-side trees, relocation of utilities, and traffic disruptions during construction. Additionally, during operation the project can cause split communities, disruption of farming patterns, and loss of road-side businesses. Adequate mitigation measures are included in, and will be implemented through, an environmental management plan (EMP). The project design incorporates measures for preserving community cohesion such as improved crossings, access to public facilities (schools, and hospitals), as well as ensures access of agricultural machinery to fields, and livestock to pastures. Project public consultations were conducted from May to July 2016, and involved people from road-side villages, NGOs, road users, and other project's stakeholders.

37. The resources required and responsibilities for the implementation of environmental safeguards are as follows:

- (i) The MOT shall ensure that the preparation, design, construction, implementation, operation and decommissioning of the project and all project facilities comply with (a) all applicable national laws and regulations relating to environment, health and safety; (b) the Environmental Safeguards; and (c) all measures and requirements set forth in the IEE, the EMP, and any corrective or preventive actions set forth in a Safeguards Monitoring Report;
- (ii) The Works Contractor is responsible for preparing a site-specific EMP that reflects its understanding and commitment to address environmental issues. The Contractor is also responsible for the day-to-day implementation of the EMP and compliance at all times with the requirements of both the IEE and EMP.
- (iii) The PMCSC is tasked with specific responsibility to ensure environmental safeguards compliance of civil works, with particular emphasis on the monitoring of implementation of the EMP through the Contractor's site-specific EMP and related aspects of the project. The PMCSC will include national and international environmental specialists, who will be responsible for supervising the contractor's environmental performance, coordinating the public consultations and project grievance redress mechanism (GRM), and reporting to the PMCSC management for submission to MOT and ADB through the periodic project progress reports and annual environment monitoring reports; and
- (iv) An Environmental and Social Officer (ESO) will be hired/assigned by the PIURR and will have responsibility for day-to-day supervision of the EMP implementation, and provision of required reports. The specific responsibilities of the ESO include:

- Liaise with the Works Contractor, PMSC and MOT to ensure adherence to the IEE, EMP and LARP, and adequate implementation of related activities;
- Undertake internal supervision of the EMP implementation and report regularly to the PIURR on progress made and envisaged action plans; and
- Conduct consultation meetings with local stakeholders as required, informing them of imminent construction works, updating them on the latest project development activities, Grievance Redress Mechanism (GRM), etc.

38. **Involuntary Resettlement.** The project is classified as category B for involuntary resettlement impacts. The MOT shall ensure that land acquisition, resettlement and all other activities under the project are carried out in full compliance with all applicable laws and regulations of Tajikistan, ADB's SPS, and the land acquisition and resettlement plan. MOT shall ensure that: (i) the finalized and updated land acquisition and resettlement plan shall be disclosed to affected persons in accordance with the ADB's SPS and ADB's Public Communication Policy, 2011; (ii) all land and rights of way required by the project shall be acquired and made available in a timely manner; and (iv) no physical displacement or economic displacement shall occur and no road section or part of a road section is handed over to the civil works contractor until: (a) the land acquisition and resettlement plan is updated, finalized, and endorsed by the EA/IA; (b) compensation at full replacement cost has been paid to displaced persons in accordance with the updated and finalized resettlement plan for relevant project components or sections that are ready to be constructed; (c) other entitlements listed in the updated and finalized resettlement plan have been provided to displaced persons; and (d) land acquisition and resettlement plan implementation report is submitted to ADB and determined as satisfactory. Any new land acquisition and resettlement (LAR) impacts identified during implementation or due to change in project scope will require a new land acquisition and resettlement plan. The additional plan should be prepared following ADB's SPS and its required guidelines.

39. **Grievance Redress Mechanism.** MOT shall ensure (i) efficient grievance redress mechanisms (GRM) are in place and functional prior to starting LARP implementation and contractor's mobilization to assist affected persons resolve queries and complaints, if any, in a timely manner; (ii) all complaints are registered, investigated and resolved in a manner consistent with the provisions of GRM as agreed in ADB approved LARP, (iii) the complainants/aggrieved persons are kept informed about status of their grievances and remedies available to them; and (iv) adequate staff and resources are available for supervising and monitoring the implementation progress of the LARP.

40. **Information Disclosure.** MOT shall ensure that LARP and monitoring reports are disclosed by (i) uploading the draft and ADB approved final LARP on MOT/PIU and ADB websites, (ii) providing hard copies of approved LARP in the offices of PMSC, sub district and district offices, and with village heads; (iii) translating and providing to the affected community the executive summary of ADB approved resettlement plan, bearing information on project impacts, asset valuation, entitlements, compensation budget, and institutional arrangements.

41. Consultations were carried out during LARP preparation, however, for continued information sharing, MOT/PIU shall ensure that (i) the resettlement staff of the PIU with support from PMSC conduct additional consultations during updating and implementation of the LARP; (ii) the displaced persons are informed about (a) resettlement impacts, asset valuation, entitlements and compensation payment modalities with time lines, (b) rehabilitation and income restoration measures suggested for the project displaced persons, and (c) GRM put in place

with status of redress of grievances; and (iii) liaison is maintained with affected persons and community, and consultation meetings are held regularly with surrounding communities and project displaced persons including women and vulnerable groups to share project related information during project implementation period.

42. **Indigenous Peoples.** The project is classified as category C for Indigenous peoples impacts in accordance with ADB's SPS. MOT shall ensure that during implementation there are no impacts on indigenous peoples within the meaning of the SPS (2009).

43. **Prohibited investment activities.** Pursuant to ADB's Safeguard Policy Statement (2009), ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the Safeguard Policy Statement (2009).

VIII. GENDER AND SOCIAL DIMENSIONS

44. **Gender.** The gender categorization of the project is "some gender elements". Socio-economic surveys have been carried out for project preparation and a summary poverty reduction and social strategy has been prepared⁸. The project design, which will address some of the factors that inhibit female mobility by: increasing safety features (road signs and street lighting), enhancing connectivity of villages (pedestrian crossings and livestock underpasses), constructing bus stops, improving rest areas and road bazaars that are safe for women and children, and promoting confidence in the new road configuration through road safety awareness trainings and workshops. Women in the project area will benefit from better access to facilities and social services, and increased opportunities for small trade and jobs during construction. The MOT, in coordination with the relevant agencies, will ensure the effective implementation of above measures aimed at increasing project benefits and impacts on women in and around the project area. The PIURR and PMCSC will also include sex-disaggregated information and indicators when reporting on the project performance and consultations. The Beneficiary, through MOT, will further ensure that the principles of ADB's Policy on Gender and Development (1998) are followed during implementation of the Project, including, but not limited to, (a) equal pay to men and women for same type of work; (b) enabling working conditions for female workers; and (c) taking all necessary actions to encourage women living in the project area to participate in planning and implementing project activities.

45. **Labor Standards, Health and Safety.** The Beneficiary, through MOT, will ensure that the core labor standards and the Beneficiary's applicable laws and regulations are complied with during project implementation. The Beneficiary, through MOT, will include specific provisions in the bidding documents and contracts financed by ADB under the project requiring that the contractors, among other things, (a) comply with the Beneficiary's applicable labor law and regulations and incorporate applicable workplace occupational safety norms; (b) do not use child labor; (c) do not discriminate workers in respect of employment and occupation; (d) do not use forced labor; (e) allow freedom of association and effectively recognize the right to collective bargaining; and (f) disseminate, or engage appropriate service providers to disseminate, information on the risks of sexually transmitted diseases, including HIV/AIDS, to the employees of contractors engaged under the project and to members of the local communities surrounding the project area, particularly women.

⁸ Accessible from the list of linked documents in the report and recommendation of the President.

46. **Illegal Trafficking.** The Beneficiary will undertake adequate measures to detect and prevent trafficking of humans, wildlife, endangered species, and illegal substances on the Project Road.

IX. PERFORMANCE MONITORING, EVALUATION, REPORTING, AND COMMUNICATION

A. Project Design and Monitoring Framework

47. The design and monitoring framework for the project is in **Table 14**.

Table 14: Design and Monitoring Framework

Impacts the Project is Aligned With			
(i) Strategic pillar on promotion of economic growth of the Tajikistan National Development Strategy ^a and			
(ii) CAREC program's strategic goal of establishing competitive corridors across the CAREC region ^b			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
Outcome Improved efficiency and safer movement of goods and people on selected sections of the Dushanbe–Kurgonteppa road	By 2022: a. Average daily vehicle-km reach 401,000 in the first full year of operation of the project road (2015 baseline: 306,000) b. Crash rate ^c per 100,000 vehicle-km of travel on the project road is 7.3 or less (2015 baseline: 7.3)	a. Annual project progress reports from MOT and PMCS b. Annual traffic accident reports from the Traffic Police Department	Insufficient allocation of funds to maintain the project road and facilities Inadequate attention given to road safety on the project road
Outputs 1. Improved road conditions, facilities, and safety along, and in the vicinity of the project road	By 2021: 1a. About 33 km of road designed to a 100 km/h standard with an average international roughness index of less than 2 m/km (2016 baseline: 6 m/km) 1b. Adequate road safety features ^d installed and functional on the project road (2016 baseline: Preconstruction road safety audit) 1c. At least 600 households ^e in the vicinity of the project road connected to solar power backup solutions (2016 baseline: 0)	1a. Project progress reports and PCR from MOT and PMCS 1b. Road safety audit reports and PCR from MOT and PMCS 1c. Project progress reports and PCR from MOT and PMCS	Inadequate financial monitoring and reporting systems

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
<p>2. Strengthened MOT institutional capacity in terms of financial management, road safety, and road asset management</p> <p>3. Completed procurement readiness for the next road section to be improved</p>	<p>By 2020:</p> <p>2a. Guidelines on safe arterial roads design developed and disseminated (2016 baseline: Not developed)</p> <p>2b. RAMS framework developed and disseminated (2016 baseline: Not developed)</p> <p>2c. Financial management system and procedures developed and PIURR staff trained (2016 baseline: Not developed)</p> <p>By 2018:</p> <p>3. Contracts for works, goods and services awarded (2016 baseline: 0)</p>	<p>2a–2c. Project progress reports and PCR from MOT and PMCSC</p> <p>3. Project progress reports and PCR from MOT and PMCSC</p>	
<p>Key Activities with Milestones</p> <p>1. Improved road conditions, facilities, and safety along, and in the vicinity of, the project road</p> <p>1.1 Award PMCSC contract by Q1 2017 and complete by Q2 2021.</p> <p>1.2 Award civil works contracts by Q1 2017 and complete by Q2 2021.</p> <p>1.3 Complete road safety audits by Q3 2017 (in-construction) and by Q2 2020 (post-construction).</p> <p>1.4 Award contract for supply of goods by Q2 2018 and complete by Q2 2021.</p> <p>2. Strengthened institutional capacity of MOT in terms of financial management, road safety, and road asset management</p> <p>2.1 Develop and disseminate guidelines on safe arterial roads design by Q2 2020.</p> <p>2.2 Develop and disseminate RAMS framework by Q2 2020.</p> <p>2.3 Develop financial management system and procedures and train PIURR staff by Q4 2020.</p> <p>3. Completed procurement readiness for the next road section to be improved</p> <p>3.1 Develop bidding documents by Q2 2017.</p> <p>3.2 Procure contracts by Q2 2018.</p>			
<p>Inputs</p> <p>ADB (Asian Development Fund): \$65.2 million equivalent, comprising \$49.4 million (loan) and \$15.8 million (grant)</p> <p>Clean Energy Fund under the Clean Energy Financing Partnership Facility: \$2.0 million</p> <p>OPEC Fund for International Development: \$12.0 million</p> <p>Government: \$17.2 million</p>			

Key Activities with Milestones

1. Improved road conditions, facilities, and safety along, and in the vicinity of, the project road
 - 1.1 Award PMCSC contract by Q1 2017 and complete by Q2 2021.
 - 1.2 Award civil works contracts by Q1 2017 and complete by Q2 2021.
 - 1.3 Complete road safety audits by Q3 2017 (in-construction) and by Q2 2020 (post-construction).
 - 1.4 Award contract for supply of goods by Q2 2018 and complete by Q2 2021.
2. Strengthened institutional capacity of MOT in terms of financial management, road safety, and road asset management
 - 2.1 Develop and disseminate guidelines on safe arterial roads design by Q2 2020.
 - 2.2 Develop and disseminate RAMS framework by Q2 2020.
 - 2.3 Develop financial management system and procedures and train PIURR staff by Q4 2020.
3. Completed procurement readiness for the next road section to be improved
 - 3.1 Develop bidding documents by Q2 2017.
 - 3.2 Procure contracts by Q2 2018.

Assumptions for Partner Financing

Not applicable

ADB = Asian Development Bank, CAREC = Central Asia Regional Economic Cooperation, h = hour, km = kilometer, m = meter, MOT = Ministry of Transport, PIURR = Project Implementation Unit for Roads Rehabilitation, PMCSC = project management and contract supervision consultant, PCR = project completion report, Q = quarter, RAMS = road asset management system.

^a Government of Tajikistan. 2007. *National Development Strategy of the Republic of Tajikistan for the period to 2015*. Dushanbe.

^b ADB. 2014. *CAREC Transport and Trade Facilitation Strategy, 2020*. Manila.

^c Data to be sex-disaggregated.

^d Includes provision of road signs, pedestrian crossings, road lighting, livestock underpasses, bus stops, and improvement of rest areas and road bazaars.

Source: Asian Development Bank

B. Monitoring

48. **Project performance monitoring.** The MOT will establish, assisted by the PMCSC, a project performance monitoring system using the targets, indicators, assumptions, and risks included in the project design and monitoring framework. Disaggregated baseline data for output and outcome indicators will be gathered within three months of the date of loan and grant effectiveness. Disaggregated data for outcome indicators will be updated and reported annually through the MOT's annual progress reports while disaggregated data for output indicators will be updated and reported quarterly through the MOT's quarterly progress reports and after each ADB review mission. These quarterly reports will provide information necessary to update ADB's project performance reporting system⁹. Data for output indicators will be collected and analyzed during the project implementation period while data for outcome indicators will be collected and analyzed up to three years after the project completion.

49. **Compliance monitoring.** Compliance for all project covenants will be jointly monitored by MOT and ADB through quarterly updates provided by the PIURR with assistance from the

⁹ ADB's project performance reporting system is available at <http://www.adb.org/Documents/Slideshows/PPMS/default.asp?p=evaltool>

PMSCS. The PIURR will submit to ADB a summary status report on the covenants with an explanation and time-bound actions on partly or non-complied covenants. ADB's Tajikistan Resident Mission will monitor compliance through quarterly review meetings with MOT. Monitoring will also be undertaken during project review missions.

50. **Environment safeguards monitoring.** With the assistance of the PMSCS's environment specialists, the PIURR shall submit to ADB semi-annual environmental reports for the project within one month of the close of each half of the calendar year. The report will include a status of the progress of environmental measures in the IEE and EMP, problems encountered, and remedial measures taken.

51. **Social safeguards monitoring.** With the assistance of the PMSCS's social safeguards specialists, the PIURR shall submit to ADB semi-annual environmental reports for the project within one month of the close of each half of the calendar year during the LARP implementation phase. The report will include a status of the progress of social safeguards measures in the LARP, problems encountered, and remedial measures taken.

52. **Gender and social dimensions monitoring.** With assistance of the PMSCS's, the PIURR will prepare annual progress reports that include sex-disaggregated information on (i) employment and pay; (ii) crash and fatality rate; (iii) people attending training, awareness, and capacity building activities; and (iv) affected people attending consultations on social and environment impacts. The project design and monitoring framework and project annual progress reports will be the main monitoring tools for poverty and social dimensions. The PIU and PMSCS will collect data through surveys and consultations in liaison with the project stakeholders and relevant government bodies.

C. Evaluation

53. Following loan and grants effectiveness, review missions including site visits will be fielded every six months to review project progress and provide guidance on project implementation. After two years of project implementation, a mid-term review mission will be fielded to review project progress and make adjustments as appropriate to facilitate project implementation and ensure successful project completion. The review missions will address policy, institutional, administrative, organizational, technical, environmental, social, economic, financial, and other relevant factors that may have an impact on project performance and project continuing viability.

54. **Project Completion Report (PCR).** Within 6 months of physical completion of the project, the MOT will submit a PCR to ADB.¹⁰ Subsequently, ADB will field a PCR mission to review and finalize the PCR.

D. Reporting

55. The MOT, with the PMSCS's assistance, will provide ADB with (i) brief monthly progress reports, (ii) quarterly progress reports in a format consistent with ADB's project performance reporting system; (iii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions, (c) an updated procurement plan, (d) an updated implementation plan for

¹⁰ Project completion report format is available at: <http://www.adb.org/Consulting/consultants-toolkits/PCR-Public-Sector-Landscape.rar>

the next 12 months; and (iv) a PCR within 6 months of physical completion of the project.

E. Stakeholder Communication Strategy

56. The project will follow ADB's Public Communication Policy and its guidelines on the disclosure and exchange of information. Broader consultations will be carried out with key project stakeholders on relevant requirements pertaining to ADB safeguards, stakeholder communication, and grievance redress procedures. Relevant project stakeholders and beneficiaries will be provided with adequate written information and communication materials in Tajik on the project relevant matters. The PIURR will maintain a tracking system to record consultation activities and provision of project information, while registering concerns and/or complaints received and monitoring follow-up actions. The stakeholder communication strategy is summarized in **Table 15**.

Table 15: Stakeholder Communication Strategy

Project document	Means of communication	Responsible	Frequency	Audience
Project data sheet	ADB's website	ADB	Initial project data sheet posted on the website no later than 2 weeks after approval of the concept paper; updated at least twice a year	General public
Initial Environmental Examination (IEE)	ADB's website; information documents; consultations	ADB and MOT	Draft IEE posted on the website before project approval; and the final version no later than 2 weeks of receipt by ADB	General public; project-affected people in particular
Land Acquisition and Resettlement Plan (LARP)	ADB's website; MOT's website and/or local newspaper; information pamphlet; and consultations	ADB and MOT	Draft LARP posted on the website before project approval; and the final/updated version no later than 2 weeks of receipt by ADB	General public; project-affected people in particular
Report and Recommendation of the President (RRP)	ADB's website	ADB	Posted on the website at the same time it is circulated to the Board for approval, subject to the concurrence of the government	General public
Legal agreements	ADB's website	ADB	Posted on the website no later than 2 weeks from their signing, after removing any information falling within exceptions at the time of the negotiations	General public
Project Administration	ADB's website	ADB	Posted on the website at the same time it is	General public

Manual (PAM)			circulated to the Board for approval, subject to the concurrence of the government	
Social and environmental safeguards monitoring reports	ADB's website; MOT's website; and consultations	ADB and MOT	Routinely disclosed, no specific requirements	General public; project-affected people in particular
Project Performance Management System	MOT's website	MOT	Routinely disclosed, no specific requirements	General public; project-affected people in particular
Major change in scope	ADB's website	ADB	Within 2 weeks of approval of the change	General public
Audited project financial statements and the auditors' report	ADB's website	ADB	Within 30 days of receipt	General public
Completion reports	ADB's website	ADB	Within 2 weeks of circulation to the Board for information	General public
Evaluation reports	ADB's website	ADB	Within 2 weeks of circulation to Management and the Board	General public

ADB = Asian Development Bank, MOT = Ministry of Transport, PMCSC =project management and contract supervision consultant

Source: Asian Development Bank.

X. ANTICORRUPTION POLICY

57. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project.¹¹ 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 and/or 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.¹²

58. To support these efforts, relevant provisions are included in the financing and grant agreements and the bidding documents for the project.

XI. ACCOUNTABILITY MECHANISM

59. People who are, or may in the future be, adversely affected by the project may submit

¹¹ Anticorruption Policy: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>

¹² ADB's Integrity Office web site: <http://www.adb.org/integrity/unit.asp>

complaints to ADB's Accountability Mechanism. 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 make an effort in good faith to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.¹³

XII. RECORD OF CHANGES TO THE PAM

60. All revisions and/or updates during the course of implementation should be retained in this section to provide a chronological history of changes to implemented arrangements recorded in the PAM, including revision to contract awards and disbursement s-curves.

Version	Creation/revision date	Description of changes
1.0	21 September 2016	

¹³ Accountability Mechanism. <http://www.adb.org/Accountability-Mechanism/default.asp>.

PROCUREMENT PLAN

Basic Data

Project Name: CAREC Corridors 2, 5, and 6 (Dushanbe–Kurgonteppa) Road Project	
Project Number: 49042-004	Approval Number: LXXXX-TAJ and GXXXX-TAJ
Country: Tajikistan	Executing Agency: Ministry of Transport
Project Procurement Classification: B	
Procurement Risk: Moderate	
Project Financing Amount: \$96.4 million ADB Financing: \$65.2 million Cofinancing (ADB Administered): \$2.0 million Non-ADB Financing: \$29.2 million	Project Closing Date: 30 September 2021
Date of First Procurement Plan: 21 September 2016	Date of this Procurement Plan: 21 September 2016

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 (ICB) for Works	\$3,000,000	Prior review
International Competitive Bidding for Goods	\$2,000,000	Prior review
National Competitive Bidding (NCB) for Works	Beneath that stated for ICB, Works	Prior review
National Competitive Bidding for Goods	Beneath that stated for ICB, Goods	Prior review
Shopping for Works	Below \$100,000	Prior review
Shopping for Goods	Below \$100,000	Prior review

Consulting Services	
Method	Comments
Quality- and Cost Based Selection (QCBS)	Prior review
Individual Consultant Selection (ICS)	Prior review

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	General Description	Estimated Value (\$ million)	Procurement Method	Review [Prior / Post/Post (Sampling)]	Bidding Procedure	Advertisement Date (quarter/year)	Comments
CP-01	Improvement of roads between Dushanbe and Chashmasoron	62.1	ICB	Prior	1S2E	Q4/2016	Prequalification of Bidders: No Domestic Preference Applicable: No Bidding Document: Works – Large Contracts Universal procurement
CP-02	Supply of equipment for road lighting and power back-up systems	1.6	ICB	Prior	1S2E	Q4/2017	Prequalification of Bidders: No Domestic Preference Applicable: No Bidding Document: Goods Universal procurement

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 (\$ million)	Recruitment Method	Review (Prior / Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
CS-01	Consulting services for Project Management and Contract Supervision	4.00	QCBS	Prior	Q2/2016	FTP	International assignment Ratio 90:10 Universal procurement
CS-02	Consulting services for Design and Procurement of Power Equipment	0.11	ICS	Prior	Q3/2017	BTP	International assignment Universal procurement

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 (Sampling)]	Bidding Procedure	Advertisement Date (quarter/year)	Comments
None								

Consulting Services								
Package Number	General Description	Estimated Value (\$ million)	Number of Contracts	Recruitment Method	Review (Prior / Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
TBD	Consulting services for Project Auditing	0.09	2-3	QCBS	Prior	Q1/2017	BTP	International assignment Ratio 80:20 Block audit, annual service

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/Post (Sampling)]	Bidding Procedure	Comments
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.

(i) 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
None							

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
None							

(ii) 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
None								

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
None								

D. Non-ADB Financing

The following table lists goods, works and consulting services contracts over the life of the project, financed by Non-ADB sources.

Goods and Works				
General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Procurement Method	Comments
None				

Consulting Services				
General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Recruitment Method	Comments
None				

E. National Competitive Bidding

1. **General.** The procedures to be followed for national competitive bidding shall be those set forth in Law of the Republic of Tajikistan on Public Procurement of Goods, Works and Services effective on 3 March 2006 with the clarifications and modifications described in the following paragraphs required for compliance with the provisions of ADB's Procurement Guidelines.

2. **Eligibility.** The eligibility of bidders shall be as defined under section I of ADB's Procurement Guidelines published by ADB in April 2010, 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. **Bidding Period.** The minimum bidding period is twenty-eight (28) days prior to the deadline for the submission of bids.

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

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

7. **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.

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

9. 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 ADB'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.

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

11. Participation by Government-owned enterprises. Government-owned enterprises in the Republic of Tajikistan 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.

12. 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.

13. Fraud and corruption

- (i) The Beneficiary 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.

TERMS OF REFERENCE

PROJECT MANAGEMENT AND CONTRACT SUPERVISION SERVICES

I. BACKGROUND

1. Tajikistan is landlocked and heavily depends on transport corridors for investment, job creation, trade, and ultimately economic growth and poverty reduction. High transport costs, because of ailing transport infrastructure and low network connectivity coupled with geographic isolation and mountainous terrain, pose a significant barrier to the country's economic and social development. The backbone of Tajikistan's national road network, comprising three Central Asia Regional Economic Cooperation (CAREC) corridors and three Asian Highways, has been improved with assistance from ADB and other development partners.

2. The Government of Tajikistan requested ADB's assistance for improving portions of the CAREC Corridors 2, 5 and 6 by upgrading the Dushanbe to Kurgonteppa road. The project will improve a 33 kilometers (km) section of the road from Dushanbe to Chashmasoron. The project's executing agency, and Client for the consultant's contract and for the civil works contracts (the Employer), will be the Ministry of Transport (MOT), acting through its Project Implementation Unit for Road Rehabilitation (PIURR).

3. Dushanbe is the capital and largest city of Tajikistan, and is home to 775,000 people. Kurgonteppa is the capital of the Khatlon region and the third largest city in Tajikistan, with a population of about 100,000. Kurgonteppa is home to a number of industrial enterprises, universities, colleges, and hospitals. The project road passes through terrain that varies from flat to mountainous, and connects Dushanbe to Afghanistan. Except for a 3.4 km section immediately south of Dushanbe, the road is two-lane with little in-built safety features. It could be a powerful engine for regional integration and inclusive economic growth, but this potential is limited by three factors: (i) road capacity, (ii) road condition, and (iii) road safety.

4. Traffic volumes on the road have grown steadily, averaging around 13% per annum over the period 2000-2014. Present traffic ranges from approximately 7,000-10,000 vehicles per day in the center section of the road to around 16,000 vehicles per day in the peri-urban sections on the outskirts of Dushanbe and Kurgonteppa. The road is projected to reach its capacity by 2020 for most of its length. Although its surface is on average in reasonable condition, with an average international roughness index (IRI) of around 6, this figure masks several significant sections where the pavement is deteriorating rapidly. Overall, the road pavement requires improvement either immediately or in the near to medium term. This is due to the emergence of cracking and potholes and damage to structures and drainage systems. The road also has a poor safety record, with a high concentration of accidents in the more heavily trafficked sections adjacent to Dushanbe and Kurgonteppa in particular.

5. The project will support the government's program to progressively improve the road by (i) expanding its width from two to four lanes, to address the impending capacity constraints; (ii) improving its surface condition by structural overlays of the existing pavement and construction of new pavements, to address the condition constraints; and (iii) providing well-designed safety facilities to address the existing road safety deficiencies. The project will also serve to take stock, draw lessons and analyze the institutional gaps on road safety and road asset management with the view to incrementally strengthening MOT's capacities on these

aspects. This approach will support a policy dialogue that will run parallel with the progressive improvement of the road and will be closely coordinated with other development partners active in the transport sector.

6. The works will be implemented through one civil works contract.: The contract will have been procured during the preparatory project technical assistance in accordance with ADB's Procurement Guidelines (2015, as amended from time to time), and will be signed when the ADB loan for the project has been declared effective (planned in Q1 2017). The contract is based on the FIDIC Conditions of Contract Multilateral Bank Harmonized Edition June 2010.

7. An association of qualified international and national consultants (the Consultant) will be recruited to provide the services and assist the PIURR with project implementation. The Consultant will be recruited following ADB's quality- and cost-based selection (QCBS) method with a quality: cost ratio of 90:10 and submission of full technical proposals, in accordance with ADB's Guidelines on The Use of Consultants (2013, as amended from time to time).

II. OBJECTIVE OF THE ASSIGNMENT

8. The primary objectives of the consulting services are to:

- (i) Contract supervision: function as the Engineer in administering the civil works contract in accordance with the Conditions of Contract and advise the Employer on all matters concerning implementation of the contract including quality control, work progress, and dispute resolution; and
- (ii) Project management: provide support to the Employer for environment and resettlement monitoring, road safety audits, financial management, and advance procurement activities for the proposed subsequent project.

III. SCOPE OF WORK

9. As Engineer for the contract, the Consultant will undertake all of the duties required of the Engineer to ensure that the contracts are constructed and completed in accordance with their provisions. The main tasks of the Consultant will include but are not limited to the following:

- (i) reviewing the project's detailed designs to identify any significant aspects that require amendment before construction commences, and inform the Employer of these for its decision as to whether changes to the designs are to be made;
- (ii) on the basis of this review, and the Employer's decisions, accepting the designs as suitable for construction;
- (iii) ensuring that the contractors' topographical survey and cross sections to be used for working drawings, as-built drawings and measurement purposes comply with the requirements of the specifications;
- (iv) checking and approving the contractors' road and bridge construction methods and program for both temporary and permanent structures;
- (v) developing a comprehensive system of inspection checking and recording to ensure compliance of all works with the specifications;
- (vi) developing interim and final measurement and payment systems; establishing a monitoring system for costs to date, and costs to completion; providing a system for the preparation of interim and final payment certificates; providing advice on the evaluation of claims and extensions of time; providing advice on the preparation of variation orders, and for monitoring variation orders; establishing a

- claims monitoring, evaluation and reporting system; and assisting and advising the Employer on all matters pertaining to the contracts and to disputes;
- (vii) providing day-to-day supervision and inspection of works on site; maintaining by the supervision staff of a site diary covering all contractors' activities, and recording site conditions;
 - (viii) prior to commencement of works, approving of the contractors' construction plans including traffic management and traffic control arrangements, proposed public and private haul and access routes, together with the contractors' arrangements for maintenance and reinstatement of the same, borrow locations, working areas, materials stockpile areas, materials mixing, and processing areas, etc.;
 - (ix) reviewing, commenting upon, and accepting the contractors' quality assurance plans and procedures; assisting the contractors with establishing on-site and laboratory based quality control, testing, and reporting procedures for all construction, workmanship, and materials; supervising the contractors in implementation of the quality assurance plans;
 - (x) together with the PIURR, the contractors, and public utility agencies, identify all utility services (electricity, telecommunication, and water), if any, within the right-of-way that are to be protected and marked to avoid damage, or relocated, as required by the works;
 - (xi) assisting the PIURR in implementing and monitoring the project's land acquisition and resettlement plan;
 - (xii) receiving, commenting on and ultimately approving the contractors' environmental management plan;
 - (xiii) monitoring the contractors' programs and costs to completion and providing advice to the Employer on procedures necessary to complete the works within the time and cost stated in the works contract;
 - (xiv) preparing reports and providing assistance, as necessary and as required, to the Disputes Board and during any subsequent arbitration procedures;
 - (xv) conducting on-site workshops and providing comprehensive technical guidelines to staff of the PIURR, and to the national consultants, in contract administration, measurement and certification, construction supervision, quality control, in-situ and laboratory testing and reporting, monitoring and appliance of environmental and social safeguards; monitoring and implementation of the resettlement plan, and other activities as required;
 - (xvi) conducting monthly Contract Site Meetings, to be attended by representatives of the Employer and the contractor; attending and making presentations at progress coordination meetings and similar progress reviews;
 - (xvii) providing the Employer with complete records and assisting the contractor with providing "As Built" drawings for the contracts; certifying completion and taking over of part or all of the works; and
 - (xviii) preparing Final Payment Certificates, Taking Over Certificates, and Performance Certificates, to the timing of, and as required by, the contract, and advising the Employer on the release of all contractors' securities and retentions.

10. In addition to the above tasks on contract supervision, the consultant will also undertake additional tasks, including but not limited to the following:

- (i) conducting road safety audits at pre-construction, in-construction and post-construction stages; and on the basis of those audits, direct the contractor to

- implement such additional works as may be necessary to ensure the completed road meets appropriate internationally-accepted road safety standards;
- (ii) preparing guidelines and training material on safe arterial roads design and conduct road safety-focused workshops for MOT staff and other relevant stakeholders, including community, school, and other potentially-road safety affected people;
 - (iii) providing support to PIURR and MOT to develop bidding documents, procure and award contracts for civil works for improvement of a section of the Dushanbe to Kurganteppa road to the south of the project road, tentatively around 40 km in length;
 - (iv) preparing progress reporting as required and as defined in Section V of these TOR;
 - (v) assist the Employer as required with preparing withdrawal applications for disbursements from the ADB/cofinancier loans for the project; and
 - (vi) providing on-the-job training for the Employer's counterpart staff.

IV. TEAM COMPOSITION AND QUALIFICATION REQUIREMENTS FOR KEY EXPERTS

11. The consultant will provide approximately 545 person-months of consulting services: 111 person-months of international inputs and 438 person-months of national inputs (**Table 1**). All key experts marked with an asterisk in **Table 2** will be evaluated individually. The services will be provided over a period of 42 months, commencing tentatively in Q1 2017.

Table 1: Team Composition and Personnel Inputs

International positions	Key expert	Person-months	National positions	Key expert	Person-months
Team Leader/Project Management Specialist/ Highway Engineer	Yes	38	Deputy Team Leader/Highway Engineer	Yes	38
Senior Resident Engineer	Yes	36			
Senior Bridge Engineer	Yes	3	Materials Engineer	Yes	36
Senior Materials Engineer/Quality Assurance Engineer	Yes	6	Highway Design Engineer/Pavement Design Engineer	Yes	6
Senior Geotechnical Engineer	Yes	3	Geotechnical Engineer	Yes	6
Senior Procurement Specialist	Yes	6	Site Engineer/Road Inspector (2 positions)	Yes	72
Senior Road Safety Specialist	Yes	6	Site Engineer/Bridge Inspector	Yes	36
Social Safeguards Specialist	Yes	3	Laboratory Technician (2 positions)	No	72
Environmental Specialist	Yes	3	Surveyor	No	36
Senior Financial Management Specialist	Yes	4			
Head office support	No	3	CAD Specialist	No	24
			Social Safeguards Specialist	Yes	12
			Environmental Specialist	Yes	36
			Financial Management Specialist	Yes	24
			Translator/Interpreter	No	40
International consultants		111	National consultants		438

Table 2: Qualifications Requirements for Experts

International Consultants		Person-months
Team Leader/Project Management Specialist/ Highway Engineer*	Civil engineering degree, preferably with post graduate qualifications, with preferably 15 years of relevant experience in the management of multi-disciplinary projects, highway design and the administration of large civil works contracts under FIDIC-type conditions.	38 full-time
Senior Resident Engineer*	Civil engineering degree, with preferably 15 years of relevant experience in the site management of large road projects, and the administration of large civil works contracts under FIDIC-type conditions.	36 full-time
Senior Bridge Engineer*	Civil engineering degree, preferably with post graduate qualifications, with preferably 15 years of relevant experience in bridge design and construction.	3 intermittent
Senior Materials Engineer/Quality Assurance Engineer*	Civil engineering degree, preferably with post graduate qualifications, with preferably 15 years of relevant experience in road and bridge design and construction, including 8 years in quality assurance.	6 intermittent
Senior Geotechnical Engineer*	Geotechnical engineering degree or other relevant degree, preferably with post graduate qualifications, with preferably 15 years of relevant experience in geotechnical works for road projects similar to those that will be encountered on the project road, including pavement design.	3 intermittent
Senior Procurement Specialist*	Civil engineering or other relevant degree, preferably with post graduate qualifications, with preferably 15 years of relevant experience in procurement for civil works and goods supply, preferably familiar with ADB procurement procedures and guidelines.	6 intermittent
Senior Road Safety Specialist*	Civil engineering or other relevant degree, preferably with post graduate qualifications, with preferably 10 years of relevant experience in road safety audit, designing road safety remedial works, and road safety policy development and implementation.	6 intermittent
Social Safeguards Specialist*	University degree (Bachelors or above) in social sciences or social science related areas with preferably 8 years of relevant experience in preparation and implementation of land acquisition and resettlement and other social safeguards delivery, including experience with ADB's Safeguard Policy Statement (2009).	3 intermittent
Environmental Specialist*	University degree (Bachelors or above) in environment or environment related areas with preferably 8 years of relevant experience in environmental impact assessment and monitoring, including experience with ADB's Safeguard Policy Statement (2009).	3 intermittent
Senior Financial Management Specialist*	University degree (Bachelor or above) in accounting or similar expertise areas with preferably 10 years of relevant experience in financial management for agencies similar to MOT, and preferably with ADB or similar financing agencies.	4 intermittent
Head office support	Appropriate resources and expertise, to include river training and similar works.	3 Intermittent

National Consultants		Person-months
Deputy Team Leader/Highway Engineer*	Civil engineering degree, preferably with post graduate qualifications, with preferably 10 years of relevant experience in highway design and construction.	38 full-time
Materials Engineer*	Civil engineering degree or above or other relevant degree, with preferably 10 years of relevant experience in material investigation and testing for road and bridge construction.	36 full-time
Highway Design Engineer/Pavement Design Engineer*	Civil engineering degree or above, with preferably 10 years of relevant experience in highway design, including with computer-based highway design software packages.	6 intermittent
Geotechnical Engineer*	Geotechnical engineering degree or above or other relevant degree, with preferably 10 years of related experience in the design of slope stabilization works, road and bridge design and construction.	6 intermittent
Social Safeguards Specialist*	Degree in social sciences or social science related areas with preferably 8 years of related experience in land acquisition and resettlement and social safeguards, and familiar with relevant Tajikistan national laws and regulations.	12 intermittent
Environmental Specialist*	Degree in environmental engineering or environment related areas with preferably 8 years of relevant experience in environmental monitoring of road works, and familiar with relevant Tajikistan national laws and regulations.	36 full-time
Financial Management Specialist*	Chartered Accountant or Professional Certificate in Accounting, or equivalent with preferably 8 years of relevant experience in financial management for agencies similar to MOT, and preferably with ADB or similar financing agencies.	24 intermittent
Site Engineer/Road Inspector (2 positions)*	Civil engineering degree or above, with preferably 8 years of relevant experience in road construction.	72 full-time
Site Engineer/Bridge Inspector*	Civil engineering degree or above, with preferably 8 years of related experience in bridge construction.	36 full-time
Laboratory Technician (2 positions)	Technical college diploma or above, with preferably 8 years of relevant experience in road and bridge construction.	72 full-time
Surveyors	Engineering degree equivalent or above, with at preferably 8 years of relevant experience in highway-related survey work.	36 full-time
CAD Specialist	Relevant degree or diploma with preferably 8 years of relevant experience in road and bridge design using computer-based road design software.	24 full-time
Translators (2 positions)	Relevant qualifications with 5 years of experience in English/Russian translation of technical documentation.	72 full-time

12. The position-based TOR including main tasks and duties are outlined below for each key expert. The national consultants will assist and perform tasks as detailed by the counterpart international consultants and the Team Leader and report to them respectively.

A. International consultants

a. Team Leader/Project Management Specialist/ Highway Engineer (38 person-months, full-time)

13. The scope of duties of the Team Leader/Project Management Specialist/ Highway Engineer shall include, but will not be limited to the following:

- (i) coordinate all consultants' inputs including design review and approvals, management of all civil works contracts, preparation of typical designs and bidding documents, resettlement and environmental monitoring, and nonphysical components implementation monitoring which covers coordination and facilitation of project activities, and timely reporting and provision of related project information;
- (ii) review, check and approve the designs and construction drawings prepared by contractors; advise the Employer on the suitability of the designs and consider the Employer's comments before approving the designs;
- (iii) appoint various members of the Engineer's construction supervision team as the engineer's assistants and notify the contractor and the Employer, and approve the contractor's representative;
- (iv) verify whether the performance securities comply with the contract requirements, whether they are in the correct amounts and currencies, and notify the Employer accordingly;
- (v) advise the Employer whether to accept the performance securities;
- (vi) request contractors to increase the amount of the performance security if the contract price increases and monitor the validity of the performance security until the issue of the performance certificate;
- (vii) verify whether the bank guarantee for advance payment is in the form specified in the contracts and in the amount and currencies stated in the particular conditions of the contract;
- (viii) verify whether the bank guarantee for advance payment has been issued by entities acceptable to the Employer and that the guarantee is valid until the entire advance payment has been recovered;
- (ix) interpret the specific provisions of the contract related to the Employer's obligation to give possession of the site, and the contractors' work programs, assess the contractual consequences of any specific land acquisition issue and advise the employer on the appropriate mitigation measures;
- (x) obtain the parties' confirmation that all conditions in Sub-Clause 8.1 of the FIDIC Conditions of Contract are fulfilled;
- (xi) issue instructions to contractors to commence the works and record the parties' agreement according to Sub-Clause 8.1 of the FIDIC Conditions of Contract;
- (xii) verify whether the form and substance of the evidence of the contractors' insurances is satisfactory, whether insurance premiums have been paid and the required insurances are effective on the dates required by the contract;
- (xiii) verify that the terms of the contractors' insurance policies fully comply with the requirements of the contract including:
 - a. whether both the employer and the contractor are adequately covered as insured principals;
 - b. amounts insured and currencies of payment, validity of the insurance policies, special conditions;

- c. limits of insurance per event and in aggregate, deductibles, excess, conditions related to locations; and
 - d. whether and which subcontractors are covered by the insurances, and whether additional insurances will be required if a contractor engages a new subcontractor.
- (xiv) monitor whether the contractors maintain adequate insurance in the course of performance of the contract, particularly if they provided initial insurances for a fixed period which is shorter than the period required under the contract;
 - (xv) advise the employer on the appropriate action and contractual remedies in case that any contractor does not perform its insurance obligations in accordance with contract;
 - (xvi) review contractors' work programs;
 - (xvii) monitor the works progress against the work program and the cash flow estimate and request revisions, if required;
 - (xviii) report in the consultant's monthly report the work progress against contractors' work programs and cash flow estimates;
 - (xix) verify whether the progress charts in the contractors' quarterly progress reports reflect the actual progress and correspond to the latest revision of the work programs and cash flow estimates, and instruct the contractors to correct the reports, if required;
 - (xx) if required, determine contractors' entitlements to time extensions in accordance with the contract;
 - (xxi) determine the employer's entitlement to delay damages and advise the employer of the relevant contractual remedies if a contractor's progress is behind schedule;
 - (xxii) verify contractors' quarterly progress reports and notify the contractors of any incorrect or inconsistent information;
 - (xxiii) conduct regular weekly site meetings and monthly progress meetings, record and distribute the minutes;
 - (xxiv) issue regular notices to contractors of intended field measurements, measure the works, compute the quantities for payment, and determine the amounts due to contractors within the period specified in the contract;
 - (xxv) establish and maintain throughout the time for completion of all works contracts a structured system of measurement records, supporting documents and calculations for the payment of all works items, that is transparent for auditing purposes;
 - (xxvi) provide all necessary assistance to the employer and external auditors for conducting regular audits of the measurement records, supporting documents and calculations for the payment of all BoQ items;
 - (xxvii) verify the sources of indices or prices for price adjustment, determine a provisional value of an index/reference price until it is published, but, if the index is not published in certain period(s), apply the last available published value;
 - (xxviii) establish a standard format for contractors' statements and interim payment certificates;
 - (xxix) prepare and maintain the estimates of cost of works to completion continuously, update the estimates after each variation instruction or a variation order issue and after each interim payment certificate, and present the latest estimate in the engineer's monthly and semi-annual progress reports;
 - (xxx) initiate and process variations promptly;
 - (xxxi) request contractors' technical and cost proposals for variations, as required;
 - (xxxii) value variations, obtain the employer's approval of any variation that is outside the Engineer's authority to approve, issue variations under the contract, keep

- record of all variations issued under the contract and report the summary of the variations in the consultant's monthly progress reports;
- (xxxiii) when the works are completed in accordance with the contract, issue taking over certificates to contractors;
 - (xxxiv) undertake an inspection of the works at completion, and certify contractors' final accounts;
 - (xxxv) obtain the employer's specific approval before taking any action for determination of extension of time, additional costs and contractors' claims for additional time or costs, for all events for which the employer's express approval is required under the conditions of contract;
 - (xxxvi) prepare standard daily diary forms and ensure that all supervision staff maintain daily diaries of contractors' and their own activities;
 - (xxxvii) maintain an events log from the commencement of the contract;
 - (xxxviii) assist the Employer and the contract with establishing the dispute board, if required,;
 - (xxxix) establish and maintain an effective electronic documents management system,
 - (xl) carry out detailed inspections of the works during the defects notification period and prepare detailed inspection and recommendation reports for the employer after each inspection;
 - (xli) ensure that the contractors provide a safe workplace for their workforce, supervisory personnel and for members of the public requiring access through the sites in full conformity with health and safety regulations;
 - (xlii) ensure that the contractors comply fully with the requirements of the contract – specific environmental management plans and provide all reports and obtain all permits and permissions required in relation to spoil areas, borrow areas quarries and the like;
 - (xlili) keep and maintain daily records of labor, equipment and weather conditions on the site together with records of activity, progress and other events happening on the site and having relevance to the works;
 - (xliv) assist the Employer with preparing and submitting to MOT withdrawal applications at the end of each month certifying value the work accomplished in accordance with the contract;
 - (xlv) ensure project's compliance with ADB's Safeguard Policy Statement (SPS, 2009) on involuntary resettlement and monitor and report on resettlement plan implementation according to ADB's policy and guidelines;
 - (xlvi) ensure that the contractors do not use child labor, and do not differentiate wages between men and women for work of equal value in accordance with all applicable labor laws; and
 - (xlvii) ensure that the road safety provisions of the contract are implemented.

b. Senior Resident Engineer (36 person-months, full-time)

14. The scope of duties of the Senior Resident Engineer will include, but will not be limited to the following:

- (i) Responsible to the Team Leader for all aspects of contract implementation;
- (ii) Acting as the Team Leader in the Team Leader's absence;
- (iii) Overseeing the activities of all national members of the consultant's team;
- (iv) Providing to the national members of the team, and to PIURR staff if they require this, formal and onsite training in supervising civil works contracts executed under the FIDIC Conditions of Contract;

- (v) Overseeing all site survey and measurement activities, for setting out the works, controlling their compliance with specification requirements, and for measuring them for payment;
- (vi) Overseeing the operations of the contractor's quality control activities, including its onsite and, as appropriate, offsite laboratories and other materials control facilities; and
- (vii) Ensuring that the contractor complies with all aspects of the project's EMP and the contractor's site specific EMP.

c. Senior Bridge Engineer (3 person-months, intermittent)

15. The scope of duties of the Senior Bridge Engineer shall include, but will not be limited to the following:

- (i) review, evaluate and recommend approval or rejection of contractors' detailed designs and shop drawings of bridges, culverts and all ancillary structures, and propose improvements;
- (ii) review and evaluate hydrological and geotechnical reports and data and make appropriate technical recommendations;
- (iii) provide support to the site engineer/bridge inspector to supervise all structural works on a day-to-day basis;
- (iv) check and sign off all requests for inspection for structural works, including survey records; and
- (v) assist the Team Leader, as required, in all matters related to project implementation, monitoring and reporting.

d. Senior Materials Engineer/Quality Assurance Engineer (6 person-months, intermittent)

16. The scope of duties of the Senior Materials Engineer/Quality Assurance Engineer shall include, but will not be limited to the following:

- (i) take samples and test the works and materials to ensure that the works are constructed to the specified standards;
- (ii) conduct at least 10% of all compliance testing with the Engineer's own staff, notwithstanding the contractors' quality assurance systems;
- (iii) inspect all works before they are covered by subsequent work;
- (iv) ensure that the contractors establish and maintain quality assurance systems according to the specified contract requirements;
- (v) recommend approval/rejection of contractors' quality assurance personnel and ensure that only approved personnel are engaged in the contractors' quality assurance teams;
- (vi) audit the contractors' quality assurance systems bi-monthly; and
- (vii) assist the Team Leader, as required, in all matters related to project implementation, monitoring and reporting.

e. Senior Geotechnical Engineer (3 person-months, intermittent)

17. The scope of duties of the Senior Geotechnical Engineer shall include, but will not be limited to the following:

- (i) provide clear recommendation on all issues related to subsoil and foundation engineering for bridges, culverts and earth retaining structures, stability of slopes and settlement, and pavement;
- (ii) review contractors' geotechnical reports and materials test reports and recommend approval/rejection;
- (iii) review geotechnical aspects of contractors' designs and recommend approval/rejection;
- (iv) investigate sites and determine the stability of slopes; ensure that all part of the works that involve critical geotechnical conditions, such as embankments, excavations, are analyzed carefully, and that designs for these are appropriate; and
- (v) assist the Team Leader, as required, in all matters related to project implementation, monitoring and reporting.

f. Senior Procurement Specialist (6 person-months, intermittent)

18. The scope of duties of the Senior Procurement Specialist shall include, but will not be limited to the following:

- (i) provide support to the PIURR throughout the bidding processes for goods and civil works for rehabilitation of the next section of the Dushanbe to Kurgontheppa road to the south of the project road in accordance with ADB's *Procurement Guidelines* (2015, as amended from time to time);
- (ii) prepare adequate bidding documents for the procurement of goods and civil works in accordance with the procurement plan and technical specifications
- (iii) Assist the PIURR in seeking ADB's no-objection at different stages of the bidding process;
- (iv) assist the PIURR in inviting bids, conducting pre-bid conferences and responding to bid queries;
- (v) assist the PIURR in preparing bid evaluation reports and contract negotiations; and
- (vi) assist the Team Leader, as required, in all matters related to project implementation, monitoring and reporting.

g. Senior Road Safety Specialist (6 person-months, intermittent)

19. The scope of duties of the Senior Road Safety Specialist shall include, but will not be limited to the following:

- (i) prepare guidelines and training material on safe arterial roads design to be piloted where practicable on the project road;
- (ii) conduct road safety reviews and audits at pre-construction, in-construction and post-construction stages to ensure the completed project road meets appropriate internationally-accepted road safety standards, and provide appropriate reports for each of these audits;
- (iii) review the detailed design documents to ensure that the results of the road safety audit have been duly incorporated;
- (iv) monitor the contractor's method statements for each part of the works to ensure that road safety concerns and remedial measures have been incorporated;
- (v) ensure that the contractor complies with contract requirements for traffic management, including road signing;

- (vi) assist MOT in unifying and standardizing traffic and road signs for its road networks;
- (vii) prepare training workshops and public campaigns for the people in the project area (including schools and communities) on traffic regulations and road safety issues; and
- (viii) assist the Team Leader, as required, in all matters related to project implementation, monitoring and reporting.

h. Social Safeguards Specialist (3 person-months, intermittent)

20. The scope of duties of the Social Safeguards Specialist shall include, but will not be limited to the following:

- (i) arrange the work program and activities to conform to the project work program, and ensure the availability of the involuntary resettlement (IR) expertise and support during crucial stages of the project, until the project's resettlement plan has been fully implemented;
- (ii) prepare the required safeguard documents for any new IR impacts during project implementation for ADB review and endorsement before implementation. The documents are to be prepared in consultation with affected people;
- (iii) monitor, evaluate and report on the implementation of the updated and finalized RP processes conforming to the Government regulations and ADB's Safeguard Policy Statement (2009), as the project proceeds. Document all grievances dealt with under the process established by the project, and report to government, ADB and the Team Leader;
- (iv) audit and review compliance with the updated and finalized Resettlement Plan (RP) and other RP addendums as required, and the fair and equitable settlement of the compensation and rehabilitation of affected persons and structures under the provisions of the Land Acquisition and Resettlement Plan (LARP) and ensure that the impacts conform with those expected and satisfy ADB's Safeguard Policy Statement (2009). The findings, issues and non-compliance, and any variance from the provisions of the LARP are to be reported to the government, ADB and the Team Leader;
- (v) provide assistance to the Employer, the government and the project in identifying, facilitating and resolving LARP issues;
- (vi) monitor and report the implementation of the project's GRM through complaint cases registered in the GRM committee. Provide any improvement (if any) for the project GRM for better complaint's resolution. Include the GRM implementation status in the project progress reports;
- (vii) contribute to progress reports on RP matters with particular reference to lessons learned;
- (viii) review the RP in the light of the experience of applying the plan with recommendations for LARP processes and approach for similar projects in the future;
- (ix) assess capacity building and on-the-job instruction needs for the national resettlement specialist, the Employer's staff, and district and local government staff involved in resettlement activities. Develop and submit a training and capacity building program to the Team Leader within one month of the commencement of services; and
- (x) provide summary reports of the capacity building and instruction activities at the end of each visit by the specialist to the project to monitor LARP compliance; and

- (xi) assist the Team Leader, as required, in all matters related to project implementation, monitoring and reporting.

i. Environmental Specialist (3 person-months, intermittent)

21. The scope of duties of the Environmental Specialist shall include, but will not be limited to the following:

- (i) assist the Employer and the Team Leader in reviewing and approving the contractor's site specific environmental management plan (SSEMP), to be based on the project's Environmental Management Plan;
- (ii) monitor day-to-day compliance with the SSEMP;
- (iii) provide capacity building, training and other support to the Employer and the contractor's staff, including orientation on environmental requirements and the management and monitoring of mitigation provisions before construction commences;
- (iv) incorporate EMP provisions into the inspection documentation prepared for the supervision team;
- (v) provide advice and support to the consultant's national environment expert and staff of the Employer in supervision of works to ensure EMP compliance;
- (vi) periodically review monitoring reports, including the bi-annual EMP compliance report, and identify any adaptations or improvements necessary to ensure that the EMP is being properly implemented;
- (vii) assist with the preparation of progress reports, and develop the competence of the national environmental expert and counterpart staff for the preparation of such reports;
- (viii) in the final stages of construction, review the EMP monitoring provisions and establish the monitoring system for the operational phase of the project; and
- (ix) assist with the production of manuals, booklets, brochures and pamphlets for public awareness related to the project's environmental management; and
- (x) assist the Team Leader, as required, in all matters related to project implementation, monitoring and reporting.

j. Senior Financial Management Specialist (4 person-months, intermittent)

22. The scope of duties of the Senior Financial Management Specialist shall include, but will not be limited to the following:

- (i) Review the Financial Management Assessment undertaken during the processing of the project and, based on this develop a comprehensive program for improving the capacity of MOT and the PIU to manage the financial aspects of this project, and of other similar projects financed by development partners.
- (ii) This program will include Improving existing financial management systems, or developing systems where these do not yet exist to the extent necessary, that will:
 - a. ensure that the systems are not dependent on specific individuals, but can continue to function when personnel change;
 - b. address conflict of interest aspects of the existing financial management systems;
 - c. improve system integrity, through better and more secure management of electronic and paper based information systems;

- d. ensure business continuity, through off-site storage of information and documents, and by other means as appropriate;
- e. improve reporting procedures;
- (iii) Prepare manuals and procedures for the new systems, and submit these to MOT and ADB for review and concurrence;
- (iv) Once MOT and ADB have provided their concurrence, prepare and implement training programs for MOT and PIURR personnel at all levels; and
- (v) Schedule further visits to ensure the systems are being operated as intended, and provide additional training if system implementation is not proceeding as intended.

B. National Consultants

a. Deputy Team Leader/Highway Engineer (39 person-months, full-time)

23. The scope of duties of the Deputy Team Leader/Highway Engineer shall include, but will not be limited to the following:

- (i) assist the Team Leader, as required, in all matters related to project implementation, monitoring and reporting;
- (ii) supervise the operation and construction activities of the contractors on a daily basis;
- (iii) ensure that the construction methods proposed by the contractors are satisfactory and inspect the same during construction;
- (iv) inspect all workmanship before the same is covered up by subsequent work;
- (v) make necessary measurements to ensure that the works are constructed to specified tolerances, lines, and levels;
- (vi) verify contractors' statements and recommend them to the Engineer for certification; and
- (vii) ensure project's compliance with ADB's Safeguard Policy Statement (2009) on involuntary resettlement to avoid or at least minimize involuntary resettlement impacts in collaboration with social safeguard specialists.

b. Materials Engineer (36 person-months, full-time)

24. The scope of duties of the Materials Engineer shall include, but will not be limited to the following:

- (i) inspect the borrow areas and aggregate sources identified by contractors;
- (ii) review the adequacy of contractors' laboratory setup, testing procedure, scrutinizing the test reports;
- (iii) review mix designs prepared by contractors;
- (iv) monitor and check the quality of contractors' materials and workmanship on a day-to-day basis;
- (v) maintain material testing data base established by the senior materials engineer/quality assurance engineer;
- (vi) ensure enforcement of quality control and quality assurance procedures and keep his/her own site diary;
- (vii) recommend the Engineer's approval/rejection of contractors' materials and workmanship;

- (viii) review the field and laboratory tests procedures and results of the laboratory and field tests;
- (ix) conduct and manage the Engineer's own testing independently from contractors;
- (x) supervise and management of the engineer's technicians and laboratory labor;
- (xi) prepare monthly and quarterly quality assurance reports; and
- (xii) carrying out any other duty required by the international senior materials engineer; and
- (xiii) assist the Team Leader and Deputy Team Leader, as required, in all matters related to project implementation, monitoring and reporting.

c. Highway Design Engineer/Pavement Design Engineer (6 person-months, intermittent)

25. The scope of duties of the Highway Design Engineer/Pavement Design Engineer, working with the International Materials and Geotechnical Engineers will include, but will not be limited to the following:

- (i) based on the assessments done during project preparation, update the road condition survey to reflect subsequent changes, and classify and map pavement defects;
- (ii) guide and supervise material investigations related to the pavement defects;
- (iii) analyze and diagnose causes of pavement defects, and recommend adequate remedial treatments of damaged pavements;
- (iv) estimate the quantities of the pavement remedial works that needs to be carried out before the pavement overlay;
- (v) provide technical advice for asphalt overlay works; and
- (vi) assist the Team Leader and Deputy Team Leader, as required, in all matters related to project implementation, monitoring and reporting.

d. Geotechnical Engineer (6 person-months, intermittent)

26. The scope of duties of the Geotechnical Engineer shall include, but will not be limited to the following:

- (i) supervise all field investigations and testing;
- (ii) inspect structural foundations;
- (iii) contribute to the analysis of all issues related to subsoil and foundation engineering for bridges, culverts and earth retaining structures, stability of slopes and settlement, and structures included in the civil works contracts;
- (iv) review geotechnical reports and soil test results for all contracts and recommend approval/rejection of such reports;
- (v) carrying out any other duty required by the international senior geotechnical engineer; and
- (vi) assist the Team Leader and Deputy Team Leader, as required, in all matters related to project implementation, monitoring and reporting.

e. Site Engineer/Road Inspector (2 positions, 36 person-months each)

27. The scope of duties of the Site Engineer/Road Inspector shall include, but will not be limited to the following:

- (i) under the direction of the International Resident Engineer, ensuring that all road works under the contract, including earthworks, pavement, traffic facility, and other road-related works are undertaken by the contractor in full compliance with the requirements of the contract;
- (ii) receiving from the contract requests for inspection, and undertake inspections based on those requests;
- (iii) confirming that works completed by the contractor comply with the contract in all respects before permitting the contractor to carry out subsequent works that would conceal, overlay, or otherwise cause to be made inaccessible works that had not been accepted as complying with the contract;
- (iv) coordinating with other consultant's team members, for example survey, materials testing and quality control, quantity survey and payment preparation, environment, and others as appropriate, in undertaking the position's responsibilities;
- (v) ensuring on a day-to-day basis that the contractor complies with the project's EMP and the contractor's site specific EMP;
- (vi) carrying out any other duty required by the international senior resident engineer; and
- (vii) assisting the International Resident Engineer and Deputy Team Leader, as required, in all matters related to project implementation, monitoring and reporting.

f. Site Engineer/Bridge Inspector (1 position, 36 person-months)

28. The scope of duties of the Site Engineer/Bridge Inspector shall include, but will not be limited to the following:

- (i) under the direction of the International Resident Engineer and the International Bridge Engineer, ensuring that all bridge works under the contract, including foundations, concrete works, traffic facility, and other bridge-related works are undertaken by the contractor in full compliance with the requirements of the contract;
- (ii) receiving from the contract requests for inspection, and undertake inspections based on those requests;
- (iii) confirming that works completed by the contractor comply with the contract in all respects before permitting the contractor to carry out subsequent works that would conceal, overlay, or otherwise cause to be made inaccessible works that had not been accepted as complying with the contract;
- (iv) coordinating with other consultant's team members, for example survey, materials testing and quality control, quantity survey and payment preparation, environment, and others as appropriate, in undertaking the position's responsibilities;
- (v) ensuring on a day-to-day basis that the contractor complies with the project's EMP and the contractor's site specific EMP;
- (vi) carrying out any other duty required by the international senior resident engineer; and
- (vii) assisting the International Resident Engineer and Deputy Team Leader, as required, in all matters related to project implementation, monitoring and reporting.

g. Social Safeguards Specialist (12 person-months, intermittent)

29. The scope of duties of the Social Safeguards Specialist shall include, but will not be limited to the following:

- (i) assist with the preparation of documentation and translation, ensure that the Russian language translation is correct;
- (ii) visit the project site on a regular basis and assist the supervision team and the MOT on compliance monitoring of the works, in accordance with the LARP, and summary poverty reduction and social strategy;
- (iii) ensure the implementation of Public Communication Policy (2011) through the distribution of safeguards documents (translated resettlement plans, project pamphlet, GRM information, etc.) to the affected people and project area communities;
- (iv) maintain regular and reliable records of all inspections and outcomes, covering any cases of non-compliance, and remedial actions instructed and taken;
- (v) assist with establishing related monitoring procedures for the operation phase of the project;
- (vi) monitor the implementation and processing of the project's GRM and include the monitoring result in the overall safeguards monitoring report in the monthly project progress report; and
- (vii) carrying out any other duty required by the international social safeguards specialist; and
- (viii) assist the Team Leader and Deputy Team Leader, as required, in all matters related to project implementation, monitoring and reporting.

h. Environmental Specialist (36 person-months, full-time)

30. The scope of duties of the Environmental Specialist shall include, but will not be limited to the following:

- (i) assist the international environment specialist, in providing initial orientation to MOT's staff roles and responsibilities for EMP implementation, including the preparation of materials and instructions in Russian and/or Tajik;
- (ii) assist with the preparation of documentation and translation, ensuring that the Russian language translation is correct;
- (iii) visit the project site on a regular basis and assist the supervision team and the MOT on EMP compliance monitoring of the works;
- (iv) maintain regular and reliable records of all inspections and outcomes, covering any cases of non-compliance, and remedial actions instructed and taken; and
- (v) assist with establishing environmental monitoring procedures for the project's operation phase; and
- (vi) carrying out any other duty required by the international environment specialist; and
- (vii) assist the Team Leader and Deputy Team Leader, as required, in all matters related to project implementation, monitoring and reporting.

k. Financial Management Specialist (24 person-months, intermittent)

31. The scope of duties of the Financial Management Specialist, working with the International Financial Management Specialist will include, but will not be limited to the following:

- (vi) Review the Financial Management Assessment undertaken during the processing of the project and, based on this assist the International Financial Management Specialist in developing a comprehensive program for improving the capacity of MOT and the PIU to manage the financial aspects of this project, and of other similar projects financed by development partners.
- (vii) This program will include improving existing financial management systems, or developing systems where these do not yet exist to the extent necessary, that will:
 - a. ensure that the systems are not dependent on specific individuals, but can continue to function when personnel change;
 - b. address conflict of interest aspects of the existing financial management systems;
 - c. improve system integrity, through better and more secure management of electronic and paper based information systems;
 - d. ensure business continuity, through off-site storage of information and documents, and by other means as appropriate;
 - e. improve reporting procedures;
- (viii) Prepare manuals and procedures for the new systems, and submit these to MOT and ADB for review and concurrence;
- (ix) Once MOT and ADB have provided their concurrence, prepare and implement training programs for MOT and PIURR personnel at all levels;
- (x) Ensure the systems are being operated as intended, and provide additional training if system implementation is not proceeding as intended;
- (xi) Assist the Team Leader and Deputy Team Leader, as required, in all matters related to project implementation, monitoring and reporting.

V. REPORTING REQUIREMENTS AND TIME SCHEDULE FOR DELIVERABLES

32. The consultant will prepare the reports and other documents listed in **Table 3** below. All reports are to be in English (2 copies) for ADB and in English and Russian (3 copies each) for the MOT. Advance copies of the English language reports shall be submitted to ADB electronically, using an appropriate large file sharing application. At the conclusion of the project, all reports prepared during the project are to be submitted to the Employer and ADB in CD or similar format.

Table 3: Reporting and Document Submission Requirements

Reports	Contents	Due Date
Monitoring and Progress Reports		
Inception report	<ul style="list-style-type: none"> ▪ detailed work program; ▪ updated methodology (where appropriate) in line with the TOR; ▪ baseline data on project expected outcomes and 	Within 5 weeks after commencement of services

		<ul style="list-style-type: none"> outputs; ▪ identification of major likely issues and problems, and proposition of recommendations. ▪ format is to be agreed with ADB and the PIURR. 	
Monthly reports		<ul style="list-style-type: none"> ▪ summary in graphical form to the extent possible of project progress (physical, financial, safeguards...), work accomplished and any problems encountered during the month; ▪ proposition of work plan for next month with recommendations to achieve the objectives; ▪ format is to be agreed with ADB and the PIURR. 	Within 21 days after the end of each month
Quarterly reports		<ul style="list-style-type: none"> ▪ summary of project progress (physical, financial, safeguards...), work accomplished and any problems encountered during the quarter; ▪ summary of financial management action plan; ▪ proposition of work plan for next quarter with recommendations to achieve the objectives; ▪ format is to be agreed with ADB and the PIURR. 	Within 21 days after the end of each quarter
Annual reports		<ul style="list-style-type: none"> ▪ summary of project progress (physical, financial, safeguards...); work accomplished and any problems encountered during the year; ▪ progress achieved by project output measured against the targets of the design and monitoring framework; ▪ key implementation issues and solutions; ▪ updated procurement plan; ▪ updated implementation plan for the next 12 months; ▪ format is to be agreed with ADB and the PIURR. 	Within 21 days after the end of the (fiscal) year from the mobilization date
Mid-term report	review	<ul style="list-style-type: none"> ▪ comprehensive review of project progress, achievements and problems at mid-term review stage; ▪ description of any revisions made or estimated to be made to the project design; ▪ format is to be agreed with ADB and the PIURR. 	At least 21 days prior to the ADB mid-term review mission
Project report	completion	<ul style="list-style-type: none"> ▪ complete description of project implementation; ▪ assessment of project performance; ▪ format is to be agreed with ADB and the PIURR. 	Within 90 days after physical completion of the project
Specific Reports and Deliverables			
Consultant's quality assurance manual		<ul style="list-style-type: none"> ▪ procedures and systems for construction supervision and contract administration; ▪ format is to be agreed with ADB and the PIURR. 	90 days after commencement of services
Road safety reports	audit	<ul style="list-style-type: none"> ▪ detailed findings of the road safety audit; ▪ recommendations for making good any defects or omissions identified in the road safety audits; ▪ format is to be agreed with ADB and the PIURR. 	Within 120 days after commencement of services (pre-construction audit) At least 15 days before taking

			over the works (post- construction audit)
Guidelines on safe arterial roads design	<ul style="list-style-type: none"> ▪ guidelines on safe arterial roads design; ▪ material for training of MOT and other relevant staff; ▪ material for public awareness-raising; ▪ format is to be agreed with ADB and the PIURR. 		To be agreed with ADB and the PIURR
Financial management systems and procedures	<ul style="list-style-type: none"> ▪ detailed assessment of the current financial management and reporting systems; ▪ manuals and procedures for the new systems; ▪ material for training programs; ▪ format is to be agreed with ADB and the PIURR. 		To be agreed with ADB and the PIURR
LARP monitoring report	<ul style="list-style-type: none"> ▪ detailed assessment of the LARP implementation process and results; ▪ format is to be agreed with ADB and the PIURR. 		Within 30 days after the completion of the implementation of the LARP
Environmental monitoring reports	<ul style="list-style-type: none"> ▪ bi-annual review of implementation of the Contractor's SSEMPs; ▪ format is to be agreed with ADB and the PIURR. 		Each six months after commencement of contract implementation until contract completion
Defects notification period inspection report	<ul style="list-style-type: none"> ▪ detailed inspection findings; ▪ detailed technical and contractual recommendations; ▪ format is to be agreed with ADB and the PIURR. 		Within 5 months after issuing the taking over certificate

ADB = Asian Development Bank, EMP = Environmental Management Plan, LARP = land acquisition and resettlement plan, TOR = terms of reference.

33. The consultant must obtain the Employer's specific approval before taking any following actions:

- (i) 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;
- (ii) Approval or removal of contractor's personnel from work;
- (iii) Any variation under the contract, other than those that are within the Engineer's authority as defined in the contract; and
- (iv) Suspension of the contract works.

VI. CLIENT'S INPUT AND COUNTERPART PERSONNEL

34. The Employer will provide the following assistance to the consultant:

- (i) provide assistance to obtain the necessary visas, work permits and to comply with any other requirements for the purpose of undertaking the consultancy services;

- (ii) provide liaison with other Government offices and departments as required for facilitating the consultant's work; and
- (iii) furnish all necessary data, documentation and information relevant to the Project.

35. The Government will exempt the consultant's personnel from (or the Government of Tajikistan shall bear the cost of) any taxes, duties, fees, levies and other impositions imposed under the laws and regulations in effect or which may be enforced in the future on the consultant and its personnel in respect of: (a) any payments made to the consultant or its personnel other than Tajikistan nationals in connection with carrying out the services; (b) any equipment, materials and supplies brought into the Republic of Tajikistan for the purpose of carrying out the services and which will subsequently be withdrawn therefrom or transferred to the Employer; and (c) personnel and household effects brought into the Republic of Tajikistan by the consultant's international team members and their dependents for their personal use and which will subsequently be withdrawn therefrom upon departure of such personnel.

36. Under the terms of the civil works contract the contractor is required to provide the consultant—the Engineer—and its staff with:

- (i) fully furnished, equipped and maintained main site office, located within or close to Dushanbe;
- (ii) fully furnished and maintained residential accommodation for the Engineer's main site office staff, comprising ten one-bedroom apartments, 20 m² each, and eight two bedroom apartments, 40 m² each, for the Engineer, to be designed and constructed or renovated by the contractor as permanent buildings within 3 months from the contract commencement date, or provide equivalent rented accommodation in Dushanbe;
- (iii) three hot meals per day (breakfast/lunch/dinner), 7 days per week, to the Engineer's and Employer's staff on site (to all personnel, including drivers, employed by the Contractor on behalf of the Engineer through the Contract);
- (iv) rental/provision of the Engineer's satellite site office near the southern end of the contract road, including office maintenance;
- (v) residential accommodation for the Engineer's Satellite Site Office staff including maintenance;
- (vi) a fully furnished and serviced rented two-bed room apartment for the Team Leader in Dushanbe;
- (vii) a fully equipped Engineer's and Contractor's laboratory on site;
- (viii) survey equipment;
- (ix) up to 200 person-months of labor assistants for survey and laboratory testing; and
- (x) supervision vehicles, including drivers and vehicle maintenance.

37. In addition to the facilities provided on the project site, the Employer will provide to the Consultant a furnished office for three persons at the premises of the Ministry of Transport in Dushanbe. The furniture and office equipment will be provided by the civil works contractor.

38. After completion of the services the consultant will hand over to the Employer all equipment and furniture provided under the civil works contract.

OUTLINE TERMS OF REFERENCE

DESIGN AND PROCUREMENT OF POWER EQUIPMENT SERVICES

I. BACKGROUND

Tajikistan is landlocked and heavily depends on transport corridors for investment, job creation, trade, and ultimately economic growth and poverty reduction. High transport costs, because of ailing transport infrastructure and low network connectivity coupled with geographic isolation and mountainous terrain, pose a significant barrier to the country's economic and social development. The backbone of Tajikistan's national road network, comprising three Central Asia Regional Economic Cooperation (CAREC) corridors and three Asian Highways, has been improved with assistance from ADB and other development partners.

The Government of Tajikistan requested ADB's assistance for improving portions of the CAREC Corridors 2, 5 and 6 by upgrading the Dushanbe to Kurgonteppa road. The project will improve a 36 kilometers (km) section of the road from Dushanbe to Dahanakiik. The project's executing agency, and Client for the consultant's contract and for the civil works contracts (the Employer), will be the Ministry of Transport (MOT), acting through its Project Implementation Unit for Road Rehabilitation (PIURR).

As the CAREC Corridors 2, 5 and 6 (Dushanbe-Kurgonteppa) Road Project is being prepared, lighting and power systems issues need to be addressed to ensure safety of the road users. Some of the road does not have access to reliable consumer level electricity to power the street lights while power systems experience frequent prolonged blackouts. Further, communities that live in the vicinity of the project roads often have limited access to electricity during the winter season.

II. OBJECTIVE OF THE ASSIGNMENT

This assignment aims to prepare the design, specifications and procurement documentation, procurement process support including bid evaluation and deliver capacity building activities including trainings and workshops for the following:

- Street lighting with solar PV systems where there is no easy access to electricity
- Power backup systems for commercial and industrial uses for the tunnels
- Community electrification and energy access

The outcomes of the assignment will be:

- Design and specifications for procurement documentation and tender requirements
- Procurement process support including bid evaluation
- Deliver capacity building activities including trainings and workshops

III. SCOPE OF WORK

International Consultant

- Design field survey task list and data collection scope of work and standard operating procedure. Include relevant data to properly design solar street lights, LED tunnel and road lighting, power backup system and solar PV based microgrid community power system;
- Manage and supervise field survey team members. Ensure the data taken is correct and procedures were followed;
- Analyze data and create a preliminary project report to include: Summary of data, High level system designs, Google Earth mapping of each project location;
- Create Front End Engineering Design documents and detailed budgeting for: LED tunnel lighting, Solar Street Lights, Tunnel power backup system, Solar PV based microgrid community power system;
- Create technical requirements and prepare procurement methodology options: Full payment upon project completion, Partial payment upon project completion and a maintenance period where the remainder of the payment is paid monthly in proportion to the system performance, Performance based contracting with partial capex subsidy upfront;
- Supporting the procurement process including bid evaluation;
- Design and deliver one training on:
 - Basics of solar PV systems and its components
 - Types of solar PV systems and their use
 - Solar PV systems as part of national energy access and electrification program
 - Audience: Regulators responsible for energy planning
 - Skill assessment of participants at the end of the day
- Design and deliver one training on:
 - Making solar PV systems financially viable for investments
 - Design of funding and procurement methodologies for bankable contracts
 - Financial modeling of solar PV systems
 - Government support mechanisms for renewable energy investments
 - Audience: Regulators responsible for budgeting and investment planning
 - Skill assessment of participants at the end of the day
- Design and deliver workshops on:
 - Intermediate training of solar PV systems and its components
 - Design of solar PV systems including solar street lights and off-grid community systems
 - Off-grid solar PV community systems operations, maintenance and monitoring
 - Solar street light community systems operations, maintenance and monitoring
 - Site selection criteria
 - Workmanship and performance verification, commissioning
 - Audience: Local contractors and regulators (ministry staff) responsible for planning and procurement
 - Skill assessment of participants at the end of the day.

National Consultant

- Assist international consultant in the design of the survey documents and standard operating procedures of the data collection activities;
- Perform civil and field survey data collection such as: GPS tagging of locations, Installation of power and energy meters with their sensor systems, GIS and mapping of project sites and pole locations, Community survey on energy use;
- Ensure that the data collected is correct and reported in an organized manner;
- Assist in the development of the preliminary and final documents.

IV. QUALIFICATIONS REQUIREMENTS

International Consultant

- Preferably five years of relevant experience in solar PV systems design, quality control, assessments and project audits;
- Preferably five years of relevant experience in field project management, solar PV project management and system budgeting;
- Adequate experience in design of micro-grids, LED lighting design for road lighting, solar street light, power back up systems, and off-grid solar PV systems;
- Adequate experience and knowledge in energy financing, regulatory and policy analysis, support mechanism design for clean energy financing.

National Consultant

- Civil and field survey experience;
- Deep understanding of civil, mechanical and electrical work in Tajikistan including but not limited to: Electrical pole installation, Commercial and residential electrical installation, General construction code and international best practices, Electrical code and international best practices;
- Relevant experience in electrical installations of residential and commercial facilities;
- Relevant experience in installations of street lights and electrical poles;
- Familiarity with local and international civil, mechanical and electrical code and best practices;
- Good spoken and written English skills.

V. REPORTING REQUIREMENTS

The deliverables of this assignment will be as follows:

- Site assessment and survey document for the design and implementation of solar street lights and tunnel lighting, community solar PV systems, power backup and conditioning systems;
- Survey data analysis for the solar street lights, tunnel lighting, community solar PV systems and power backup systems;

- Training materials and skill assessment document for the capacity building and training sessions;
- Detailed budgeting and technical bidding documents for solar street lights, community solar PV system, tunnel lighting and power backup systems.