

# Project Administration Manual

Project Number: 48186-005

Loan Number:

June 2018

## Mongolia: Regional Road Development and Maintenance

The project administration manual is an active document, progressively updated and revised as necessary, particularly following any changes in project costs, scope, or implementation arrangements. This document, however, may not reflect the latest project changes.

## ABBREVIATIONS

ADB	–	Asian Development Bank
CAREC	–	Central Asia Regional Economic Cooperation
DCSC	–	design and construction supervision consultant
EIA	–	environmental impact assessment
EIRR	–	economic internal rate of return
EA	–	executing agency
EIA	–	environmental impact assessment
EIRR	–	economic internal rate of return
GAP	–	gender action plan
GDP	–	gross domestic product
HAHTP	–	HIV/AIDS and Human Trafficking Prevention Plan
IA	–	implementing agency
IRI	–	international roughness index (IRI m/km)
km	–	kilometer
MOF	–	Ministry of Finance
MRTD	–	Ministry of Road and Transport Development
NRAP	–	National Road Action Plan
PAM	–	project administration manual
PIU	–	project implementation unit
PMCBC	–	Project Management and Capacity Building Consultant
PMS	–	Pavement Management System
PPMS	–	project performance monitoring system
PPTA	–	project preparatory technical assistance
RAM	–	Road Asset Management
ROW	–	right-of-way
RF	–	resettlement framework
RP	–	resettlement plan
RRP	–	report and recommendation of the President
SDGAP	–	social development and gender action plan
SPS	–	Safeguard Policy Statement
TA	–	technical assistance
VOC	–	vehicle operating cost
VOT	–	value of time

## NOTES

- (i) The fiscal year (FY) of the Government and its agencies ends on 31 December.
- (ii) In this report, "\$" refers to US dollars.

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

1. 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.
2. The Ministry of Road and Transport Development (MRTD), the executing agency, and the Department of Road Policy Implementation and Coordination Department of the MRTD, the implementing agency, are wholly responsible for the implementation of ADB-financed projects, as agreed jointly between the borrower 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 MRTD of its obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.
3. At loan negotiations, the borrower and ADB shall agree to the PAM and ensure consistency with the loan agreement. Such agreement shall be reflected in the minutes of the loan negotiations. In the event of any discrepancy or contradiction between the PAM and the loan agreement, the provisions of the loan agreement shall prevail.
4. 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

### A. Background and Rationale

1. Mongolia is a large, sparsely populated country that is highly dependent on a narrow economic base. Rapid development of the mining sector brought economic growth but only limited employment, the critical ingredient of inclusive economic growth. To promote inclusive economic growth and regional economic cooperation and trade, the country needs to develop and make safer its regional road network and its trade and logistics infrastructure to boost agriculture, agribusiness, and tourism. To improve the sustainability of its transport infrastructure, it also needs to establish an efficient road asset management and maintenance funding system.<sup>1</sup>

2. **Strategic context.** Since 1991, the Asian Development Bank (ADB) has been a major partner in the improvement of Mongolia's transport network and has assisted in developing two major highway corridors linking Mongolia to the Russian Federation and the People's Republic of China (PRC).<sup>2</sup> This has brought development, jobs, and social services to those regions, and improved the lives of the poor.

3. Mongolia's economy has grown with gross domestic product (GDP) increasing more than \$1.27 billion in 2001 to \$10.41 billion in 2011. However, GDP fell from 17.3% in 2011 to 5.1% in 2017 because of plummeting foreign direct investment, falling commodity prices, and moderating growth in the PRC. Mongolia urgently needs to restore macroeconomic stability in the short term and to develop a more resilient and diversified economy that can deliver rapid, inclusive, and sustainable growth in the long term. This requires infrastructure investments and regional integration to improve connectivity and access to domestic and external markets.<sup>3</sup>

4. Mongolia's poverty rate is high for a lower-middle-income economy.<sup>4</sup> Much of the poverty stems from unemployment, absence of local markets, and lack of education. The poor condition of existing roads aggravates the persistent poverty conditions particularly in rural areas. The rural population has limited access to social services and major markets in the region and *aimags*.<sup>5</sup> Travel is costly and uncomfortable. Without access to markets, local farmers and herders are forced to sell their products at lower prices.

5. Investing in road improvement is particularly important at times of economic difficulty as it delivers four benefits: (i) projects create much-needed jobs to support economic recovery; (ii) better roads reduce road user travel costs and facilitate access to markets, schools, and health facilities, making residents more productive; (iii) modest spending on road maintenance prevents costlier rehabilitation; and (iv) road safety improvements reduce the social cost of traffic accidents.

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<sup>1</sup> The design and monitoring framework is in Appendix 1.

<sup>2</sup> ADB. 1995. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to Mongolia for the Roads Development Project*. Manila; ADB. 1999. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to Mongolia for the Second Roads Development Project*. Manila. ADB. 2010. *Report and Recommendation of the President to the Board of Directors: Proposed Supplementary Loan and Grant to Mongolia for Regional Road Development Project*. Manila. ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranche Financing Facility Western Regional Road Corridor Investment Program*. Manila.

<sup>3</sup> ADB. 2017. *Country Partnership Strategy for Mongolia (2017-2020): Sustaining Inclusive Growth in a Period of Economic Difficulty*.

<sup>4</sup> Middle-income economies have per capita gross national income (GNI) of \$1,006–\$12,235 and lower-middle-income economies have per capita GNI of \$1,006–\$3,955. Mongolia's poverty rate at \$1.90 threshold was 0.22 in 2014, and the per-capita GNI was \$3,590 in 2016.

<sup>5</sup> Provincial administrative unit in Mongolia.

6. **Sector performance.** The construction, maintenance and rehabilitation of state roads are funded by the state budget, development banks, and international loans and grants. During 2011–2015, MNT1.88 trillion (\$784.6 million) was invested in the upgrade and construction of roads and bridges. These expenditures were regulated by the Mongolian Road Law, 1998 and funded by the State Road Fund.<sup>6</sup> However, insufficient funds were collected as taxes were often reduced or canceled to keep fuel prices under control amid fuel price increases in the Russian Federation, on which Mongolia depends for much of its fuel.

7. While investment in new road construction has grown, it has not been matched by commensurate increases in road maintenance and rehabilitation. The state budget provides separate annual allocations for routine maintenance and rehabilitation, but the government has not funded any major maintenance or rehabilitation projects in 2011–2015, and the amount allocated to the MRTD for routine maintenance has been constrained to only 15% of estimated needs. Consequently, road maintenance has been insufficient, and the condition of the existing road network has deteriorated, making transport costs high and Mongolia's exports uncompetitive.

8. The country urgently needs to improve its road asset management (RAM). A previously implemented RAM system is no longer used because of limited funding. Timely road maintenance is less costly than allowing roads to deteriorate and need major rehabilitation or reconstruction—saving money in tight fiscal situations. This requires capacity development and institutional strengthening, significant investment in a periodic maintenance and rehabilitation program, and stronger enforcement of vehicle weight restrictions to prevent costly road damage from overloading.

9. **Asset management.** To improve accessibility and optimize government spending, ADB has conducted extended dialogue with the government since 2009 through technical assistance (TA) to prepare and implement a sector roadmap and capacity development strategy, including the provision of a RAM system.<sup>7</sup> TA activities helped the government prioritize work for a periodic maintenance and rehabilitation program. Major lessons from this work included the need for predictable funding and systematic asset management practices.

10. Partly as an outcome of ADB policy dialogue, the government passed the Mongolian Road Law Amendment, 2017, which ensures that at least 20% of revenues from vehicle excise tax are allocated to road maintenance. This would add about MNT7 billion to the road fund each year.<sup>8</sup> Significantly higher fines and penalties, including for truck overloading, will also go into the road fund. Road Board will be established with the representatives of road users and government agencies. Unlike in the past, the fund is only for road maintenance and not for new road construction. The amendment is an important policy change that the project will support.

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<sup>6</sup> The road fund was established through a 1991 government decree to help stabilize the funding available to the road sector. In 1998, the Road Law distinguished between state road fund and local road funds. Further information on fund revenue and spending is provided in Sector Assessment (Summary): Transport; and Financial Analysis (accessible from the list of linked documents in Appendix 2).

<sup>7</sup> ADB. 2009. *Technical Assistance to Mongolia for Road Database Development Using Geographic Information System*. Manila; and ADB. Mongolia: Preparation of a National Road Sector Capacity Development Roadmap. <https://www.adb.org/projects/44303-012/main> (the Government of Mongolia approved the road map on 24 August 2011); and ADB. 2011. *Technical Assistance to Mongolia for Road Sector Development*. Manila (\$2 million financed on a grant basis by the Japan Fund for Poverty Reduction).

<sup>8</sup> The State Great Hural (Parliament) of Mongolia. <http://www.parliament.mn/n/xroy>. The law also provides for an increase in vehicle excise tax rates by 5% to 15%, depending on engine size and vehicle age.



11. **Road safety.** Lack of road maintenance amid rapidly increasing passenger car ownership has an immediate impact on road safety and the social cost of traffic fatalities and injuries. Mongolia has a relatively high road traffic death rate of 22 per 100,000 population.<sup>9</sup> Under the Central Asia Regional Economic Cooperation (CAREC) program, ADB has supported the development of a road safety strategy that aims to reduce fatalities on CAREC road corridors by 50% by 2030, against 2010 levels.<sup>10</sup> ADB also assists the government in developing a national road safety policy and action plan covering three road safety elements: (i) culture and behavior, (ii) engineering, both in design and maintenance, including winter activities such as snow control and de-icing; and (iii) education, including traffic safety awareness, driving skills, and traffic rules.<sup>11</sup> The project will help Mongolia implement the action plan by adopting international best practices.

12. **Value added by ADB assistance.** Previous TA (footnote 7) laid a foundation to support better planning and prioritization of asset management and to improve road maintenance funding as introduced in the Mongolian Road Law Amendment, 2017. The project will help the government implement its maintenance program, and attached TA will provide government agencies with extensive training on RAM and road safety improvement. The project will provide institutional strengthening to (i) ensure maintenance financing and prioritization, (ii) increase the efficiency and capacity of road maintenance companies, and (iii) introduce performance-based road maintenance schemes. It will integrate road safety design and new maintenance technologies and will address vehicle overloading.

13. **Link to country partnership and government strategies.** The project is well aligned with Mongolia's national action plan, 2016–2020,<sup>12</sup> as it will take measures to strengthen and raise the quality of road maintenance and gradually increase maintenance funding. It is consistent with ADB's country partnership strategy, 2017–2020 for Mongolia, which indicates improvement of physical connectivity as a priority activity under the second pillar of the strategy, "Infrastructure to Support Economic Diversification." The project will reduce transport and logistics costs on CAREC road corridor 4b, enhancing the competitiveness of Mongolia's non-mining exports.

## B. Impact and Outcome

14. The project is aligned with the following impact: inclusive economic growth promoted by enhanced local, regional, and international connectivity in Mongolia.<sup>13</sup> The project outcome will be efficiency and safety of road transport within the project area and between countries improved.<sup>14</sup>

## C. Outputs

15. **Output 1: Road asset management capacity improved.** This output will strengthen sustainable road maintenance practices and build capacity for the implementation of maintenance projects prepared and procured during the project. Capacity-building activities will include (i) reestablishing and providing training on the RAM system to improve maintenance planning,

<sup>9</sup> World Health Organization. 2015. *Global Status Report on Road Safety, 2015*. Geneva.

<sup>10</sup> ADB. 2017. *Safety Connected: A Regional Road Safety Strategy for CAREC Countries, 2017–2030*. Manila.

<sup>11</sup> ADB. 2016. *Technical Assistance to Mongolia for the Development of a Road Safety Policy and Action Plan*. Manila.

<sup>12</sup> Government of Mongolia. 2016. *Action Program of the Government of Mongolia for 2016–2020*. Ulaanbaatar. [http://www.mfa.gov.mn/wp-content/uploads/2015/06/2016-2020\\_Gov\\_AP\\_Eng\\_Revised.pdf](http://www.mfa.gov.mn/wp-content/uploads/2015/06/2016-2020_Gov_AP_Eng_Revised.pdf) (section 2.121).

<sup>13</sup> This project-related impact statement aligns with the Mongolian national action plan's strategy to develop a road, transportation, and logistical network that sustains economic growth, is consistent with social needs and demands, and provides safe and comfortable services.

<sup>14</sup> The design and monitoring framework is in Appendix 1.

implementation, and prioritization;<sup>15</sup> (ii) designing improvements in road funding to ensure sustainability of maintenance activities, including measures to prevent vehicle overloading; and (iii) supporting pilot performance-based maintenance. This output will be delivered partly through attached TA and partly with output 2.

16. **Output 2: Road condition improved.** This output will preserve and improve important regional road sections that link the PRC and the Russian Federation through Mongolia's capital and comprises part of CAREC road corridor 4b. The project will improve 311 kilometers (km) of existing national highway sections comprising Ulaanbaatar–Darkhan (193 km) and Darkhan–Altanbulag (118 km). Improvement works will include (i) pavement treatment, and (ii) widening of carriageways and shoulders within the existing right-of-way (ROW).

17. **Output 3: Road safety improved.** This output will provide capacity development in road safety policies and the implementation of safety features in the road condition improvement works undertaken with output 2. Safety features will include improvements in road markings, barriers, and guide posts. Climbing lanes will be constructed within the ROW at traffic accident blackspots, where overtaking of slow-moving vehicles often causes fatal head-on collisions. Independent road safety audits will be conducted on detailed designs, as well as a post-construction audit.<sup>16</sup>

## II. IMPLEMENTATION PLANS

### A. Project Readiness Activities

**Table 2: Project Readiness Activities**

Indicative Activities	2018												Responsible
	Q1			Q2			Q3			Q4			
	J	F	M	A	M	J	J	A	S	O	N	D	
1. Advance contracting													MRTD, ADB
2. Establish project implementation arrangements													MRTD
3. Parliament approval FFA													MOF, MRTD, ADB
4. Loan Negotiations													MOF, MRTD, ADB
5. ADB Board approval													ADB
6. Loan signing													MRTD, MOF
7. Government budget inclusion													MRTD, MOF
8. Loan effectiveness													MRTD, MOF, ADB

ADB = Asian Development Bank, FFA = Financial Framework Agreement, MOF = Ministry of Finance, MRTD = Ministry of Road Transport and Development.

Source: Asian Development Bank.

<sup>15</sup> A team of experts under the attached TA will assess the use of equipment and planning tools provided in 2010 under ADB. 2009. *Technical Assistance to Mongolia for Road Database Development Using Geographic Information System*. Manila.

<sup>16</sup> Use of ongoing or planned TA experts will be considered for the safety auditor.

## B. Overall Project Implementation Plan

Table 3: Overall Project Implementation Plan

Activities	2018				2019				2020				2021				2022				2023				2024				2025			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
A. Design and Monitoring Framework																																
Output 1: Road asset management (RAM) capacity improved																																
1.1 Define and establish RAM system																																
1.2 Conduct training in asset management and maintenance																																
1.3 Conduct road condition and traffic surveys																																
1.4 Prepare and design maintenance program																																
1.5 Pilot a performance-based arrangement for road maintenance																																
Output 2: Road condition improved																																
2.1. Implementation of road improvement works																																
2.2 Implement periodic maintenance works																																
Output 3: Road safety improved																																
3.1 Conduct prior monitoring of safety feature design																																
3.2 Conduct road safety training																																
3.3 Conduct post monitoring																																
B. Project Management Activities																																
1. Recruit PIU specialist																																
2. Recruit DCSC																																
3. Detailed design of road improvement works by DCSC																																
4. Procurement of civil works contracts																																
5. Implementation of construction supervision activities																																

DCSC = design and construction supervision consultant, PIU = project implementing unit.

Source: Asian Development Bank.

### III. PROJECT MANAGEMENT ARRANGEMENTS

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

18. The Ministry of Road and Transport Development (MRTD) is the executing agency (EA), which will form a steering committee (comprising chairperson, secretary, and its members), chaired by the State Secretary, MRTD, and comprising representatives of the MRTD, MOF, and Ministry of Environment and Tourism. The Department of Road Policy Implementation and Coordination Department, MRTD, will be the implementing agency (IA). The PIU staff will be recruited and established by MRTD and will report to the EA. The PIU will be supported by the Project Management and Capacity Building Consultant (PMCBC) to be engaged under the associated technical assistance (TA).

**Table 4: Roles and Responsibilities**

<b>Project Implementation Organizations</b>	<b>Management Roles and Responsibilities</b>
Ministry of Finance (MOF)	<ul style="list-style-type: none"> <li>• Nominate authorized signatories to approve withdrawal applications processing;</li> <li>• Sign legal agreement;</li> <li>• Secure overall project financial aspects ensuring project implementation;</li> <li>• Approve structure, composition, and remuneration of PIUs based on the PAM and relevant regulations;</li> <li>• Issue decisions concerning opening and closing of project advance account and sub-accounts, if it is not regulated otherwise in contracts and agreements, issue decisions concerning appropriation of any interests earned by project advance account and sub-accounts;</li> <li>• Assume supervision and oversight of financial performance;</li> <li>• Responsible for timely approvals and/or submission; projects variation, allocation, equipment tax exemption, and other relevant documents;</li> <li>• Process and submit to ADB withdrawal applications and, if required, requests for reallocation of the loan proceeds;</li> <li>• Liaise with the National Audit Office over the establishment of project audit arrangements; and</li> <li>• Archive project reports, audited financial statements and other project related documents.</li> </ul>
Ministry of Road and Transport Development (MRTD) (Executing Agency)	<ul style="list-style-type: none"> <li>• Establish Project Steering Committee promptly;</li> <li>• Appoint Project Coordinator based on competitive selection results and endorsement of MOF; dismiss Project Coordinator based on contract permitted justifications;</li> <li>• Recruit through open competitive selection and dismiss project staff other than those described in Article 10.1.8 and 10.1.9 of Regulation 196 and relevant amendments to the regulation;</li> <li>• Administer financing and procurement of projects in conformance with laws, regulations and guidelines of Mongolia and ADB, if not regulated otherwise in loan agreement;</li> <li>• Conclude contract with selected provider of goods, works and services required for the project, oversee performance of such contracts, enforce compliance with relevant regulations and clauses set in the loan agreement and PAM and evaluate implementation;</li> </ul>

Project Implementation Organizations	Management Roles and Responsibilities
Department of Road Policy Implementation and Coordination, MRTD (Implementing Agency)	<ul style="list-style-type: none"> <li>• Develop, in conformance with Budget Law, and submit to Ministry of Finance proposals reflecting input of PIUs regarding expected external and internal financial contributions provided under signed loan agreements for their consideration in drafting of budget ceilings, annual draft budgets, budget amendment drafts and budget schedules;</li> <li>• Ensure financial statements are audited by an independent auditor and submit audit reports to ADB;</li> <li>• Undertake control of goods, works, services procured with proceeds of foreign loans as well as contractor performance, evaluate and validate satisfaction of contractual obligations;</li> <li>• If contractual obligations of the contractor are evaluated as having been not met, submit proposal to ADB regarding changing or, if deemed necessary, terminating the underlying contract, and reach solution based on mutual consensus;</li> <li>• If contractual obligations of the consultant are evaluated as having been not met, submit proposal to ADB regarding changing or, if deemed necessary, terminating the underlying contract, and reach solution based on mutual consensus;</li> <li>• Accept from PIUs for archiving purposes final project reports, audited financial statements, and all other project-related documents and ensure the PIU uploads these reports and documents to MOF's Official Development Assistance Management and Information System (ODAMIS) on a timely basis;</li> <li>• Subject to approval of MOF, undertake service contract extensions and cancellations for project coordinators, project financial and procurement specialists;</li> <li>• Develop in conformance with Articles 7 and 8 of Regulation 196 and any amendments to the regulation and incorporate into project documents, based on recommendations of EA's unit in charge of monitoring, evaluation and internal audit, provisions concerning the scope of project monitoring and evaluation as well as M&amp;E implementation plans;</li> <li>• Include in budgeted project costs all expenditures related to project monitoring and evaluation;</li> <li>• Undertake progress assessment of projects implemented;</li> <li>• Guide project implementation based on findings and recommendations of project monitoring and evaluation reports, and ensure implementation of such recommendations; and</li> <li>• Conduct project impact evaluation by an independent, professional entity upon project completion, and enter the report into the ODAMIS.</li> </ul>

Project Implementation Organizations	Management Roles and Responsibilities
Project Implementation Unit (PIU) established under MRTD	<ul style="list-style-type: none"> <li>• Establish safeguards unit, including hiring an environment officer, engaging a loan implementation environment consultant (LIEC) and ad-hoc based environmental consultant to implement EMP, EMoP, GRM; and carry out environmental due diligence and safeguards issues relevant to the project;</li> <li>• Timely prepare progress reports, monitoring reports, evaluation reports and implementation completion report for submission to ADB as described in <i>Section IX, D. Reporting</i> of this PAM;</li> <li>• Review interim payment certificates, variation orders, statement of payment certificates, submit request for payments within the period defined in the civil works contract documents; and</li> <li>• Establish financial management system, process withdrawal applications and ensure timely payments to contractors, suppliers and consultants.</li> </ul>
Project Steering Committee (PSC)	<ul style="list-style-type: none"> <li>• Chaired by the State Secretary;</li> <li>• Provide EA and PIU with the policy guidance to facilitate complete and timely achievement of project objectives;</li> <li>• Provide coordination and cohesiveness within and between sectors to ensure effectiveness and efficiency of project activities;</li> <li>• Review and approve project mid-term implementation plan, detailed annual implementation plan, as well as procurement and financial plans based on the latter;</li> <li>• Review and evaluate on semi-annual basis the implementation of plans, and related monitoring and evaluation reports;</li> <li>• Review and evaluate an annual project progress assessment report during the meeting to be held in the first quarter of the following year;</li> <li>• Provide recommendations on remedial actions to EA and PIU, if required, and oversee implementation of such recommendations; and</li> <li>• If implementation of above recommendations is considered as not satisfactory, advise EA to impose disciplinary measures on responsible staff, in accordance with accountability principles.</li> </ul>
Asian Development Bank (ADB)	<ul style="list-style-type: none"> <li>• Support implementation including compliance by EA and PIU and its obligations and responsibilities for project implementation in accordance with ADB's policies and procedures;</li> <li>• Conduct loan review missions, midterm review, project completion review, and if required, special project administration review;</li> <li>• Monitor status of compliance with all loan covenants, including safeguards;</li> <li>• Review the annual audit report and follow up on the audit recommendations; and</li> <li>• Support the Project Steering Committee by attending the PSC deliberation meeting on the recruitment of the Project Implementation Unit staff.</li> </ul>

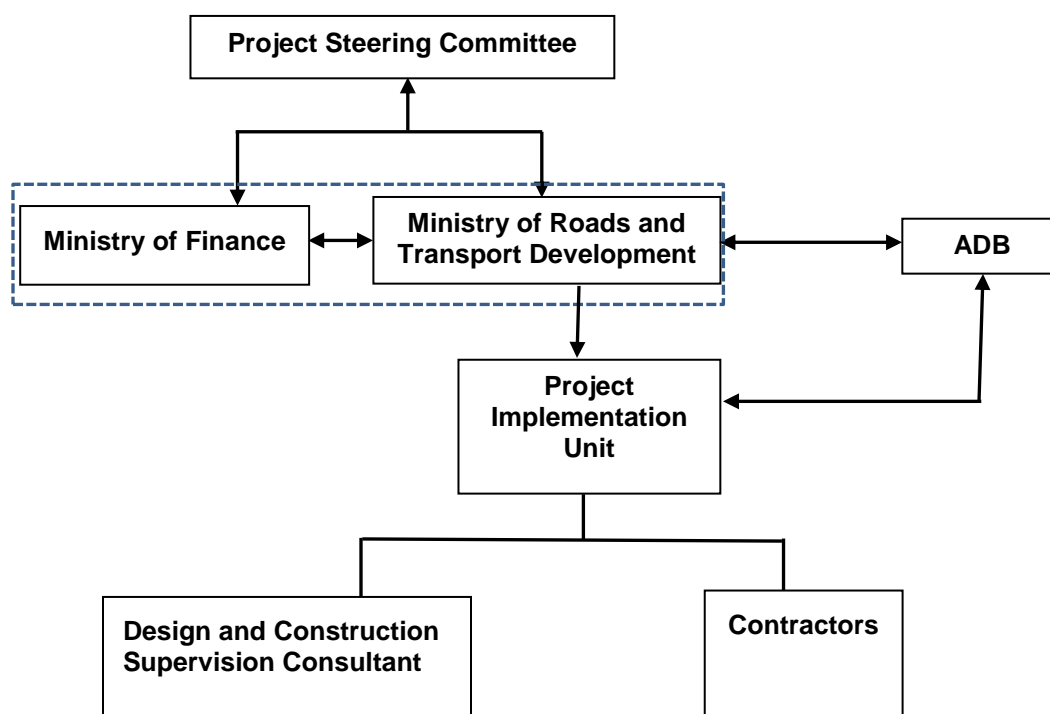
Source: Asian Development Bank.

## B. Key Persons Involved in Implementation

<b>Government/Executing Agency</b>	
Ministry of Road and Transport Development	Mr. J.Bat-Erdene State Secretary Tel. +976 622 63201 Fax. +976 622 63201 Office address: 14251 Chinggis Khan Avenue, Sukhbaatar District, Ulaanbaatar, Mongolia
<b>Asian Development Bank</b>	
Transport and Communication Division	Ms. Sujata Gupta Director Tel. +63 2 632 5582 sgupta@adb.org Office address: 6 ADB Avenue, Mandaluyong City 1550 Metro Manila, Philippines
Project Lead	Mr. Masahiro Nishimura Senior Transport Specialist Tel. +63 2 638 1938 mnishimura@adb.org Office address: 6 ADB Avenue, Mandaluyong City 1550 Metro Manila, Philippines

### C. Project Organization Structure

**Figure 1: Project Organization Structure**



19. The MRTD will be assisted by a Project Steering Committee (PSC). The PSC will be set up at central level and will be chaired by the MRTD state secretary and comprise representatives of the MOF, MRTD Monitoring, Evaluation and Internal Audit Department as per the Regulations on Foreign loan use, implementation, organization, financing, monitoring and evaluation of projects and programs funded by the loan (approved by the Finance Minister Order 196 dated 10 July 2015) and other agencies and stakeholders to be decided considering the project specifics at a later stage if any.

20. The PIU is under the supervision of MRTD. The PIU team terms of reference is detailed in Appendix 2. The PIU will be established with the following expertise:

Name	Position	Person-month (pm)
1. To be determined (TBD)	Project Coordinator	67
2. TBD	Maintenance Engineer	37
3. TBD	Material Engineer	33
4. TBD	Project Accountant/Financial Management	67
5. TBD	Procurement Specialist	29
6. TBD	Social Development Specialist	15
7. TBD	Environment Safeguard Officer	20
8. TBD	Translator / Office Administrator	65



21. Environmental specialist, environmental safeguard and environmental monitoring specialist, and social development specialist consultants will be recruited by the PIU as part of the project to provide project implementation and management support.

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

22. The project is estimated to cost \$60.6 million, based on estimates of the maintenance activities, for which detailed designs are to be undertaken by the appointed design and construction supervision consultant (DCSC) after contract award.

23. The government has requested a regular loan of \$60 million from ADB's ordinary capital resources to help finance the project. The loan has a 25-year term, including a grace period of 8 years; an annual interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; a commitment charge of 0.15% per year (the interest and other charges during construction to be capitalized in the loan), and such other terms and conditions set forth in the draft loan and project agreements. Based on the straight-line method, the average maturity is 16.75 years, and the maturity premium payable to ADB is 0.20% per year.

24. ADB will finance 99% of the project cost, including the expenditures in relation to works and consulting services. The government will finance the remaining \$0.6 million for project implementation.

25. The borrower, the Government of Mongolia, will help finance the project and will assume the foreign exchange and interest variation risks of the ADB loan.

##### **A. Cost Estimates Preparation and Revision**

26. The cost estimates were prepared jointly by the PIU and ADB with assistance from the project preparatory technical assistance consultants. The sources and basis for cost estimates were reviewed during the project preparation and had been confirmed by related parties. The process was facilitated by a model in excel software which enabled easy updating or revision if necessary. The model is maintained by both PIU and ADB. Revision of cost estimates will be conducted when deemed necessary during implementation. The PIU will be responsible in proposing and drafting the revision which will be subject to ADB approval.

**Table 5: Summary Cost Estimates**  
(\$ million)

Item	Amount <sup>a</sup>
<b>A. Investment Cost<sup>b</sup></b>	
1. Civil Works	
a. Ulaanbaatar–Darkhan	41.7
b. Darkhan–Altanbulag	4.0
2. Consultants	
a. Design and supervision consultant	3.5
<b>Subtotal (A)</b>	<b>49.2</b>
<b>B. Recurrent Costs</b>	
1. Project Implementation and Management	
a. PIU (ADB financed)	0.7
b. PIU (Government financed)	0.6
<b>Subtotal (B)</b>	<b>1.3</b>
<b>Total Base Cost</b>	<b>50.5</b>
<b>C. Contingencies<sup>c</sup></b>	
1. Physical	2.3
2. Price	4.0
<b>Subtotal (C)</b>	<b>6.3</b>
<b>D. Financial Charges During Implementation<sup>d</sup></b>	<b>3.8</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>60.6</b>

ADB = Asian Development Bank, OCR = ordinary capital resources, PIU = project implementing unit.

<sup>a</sup> Includes taxes and duties of \$3.77 million to be financed from ADB loan resources. Such amount does not represent an excessive share of the project cost.

<sup>b</sup> In mid-2018 prices as of 14 March 2018.

<sup>c</sup> Physical contingencies computed at 10% for civil works; and 5% for field research and development, training, surveys, and studies. Price contingencies computed at average of 42% on foreign exchange costs and 58% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>d</sup> Interest during construction for the OCR loan has been computed at the 5-year US dollar fixed swap rate plus an effective contractual spread of 0.50% and maturity premium of 0.20%. Commitment charges for the OCR loan are 0.15% per year to be charged on the undisbursed loan amount.

Source: Asian Development Bank estimates.

## **B. Key Assumptions**

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

- (i) **Exchange rate:** MNT2,396.00 = \$1.00 (as of 14 March 2018).
- (ii) Price contingencies based on expected cumulative inflation over the implementation period are as follows:

**Table 6: Escalation Rates for Price Contingency Calculation**

Item	2019	2020	2021	2022	2023	2024	2025	Average
Foreign rate of price inflation	1.5%	1.5%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
Domestic rate of price inflation	8.0%	8.0%	8.0%	8.0%	8.0%	8.0	8.0	8.0%

### C. Detailed Cost Estimates by Expenditure Category

Table 7: Detailed Cost Estimates by Expenditure Category

Item	MNT million			\$ million <sup>a</sup>			
	Foreign Exchange	Local Currency	Total Cost	Foreign Exchange	Local Currency	Total <sup>a</sup> Cost	% of Total Base Cost
<b>A. Investment Costs<sup>b</sup></b>							
1. Civil Works							
a. Ulaanbaatar–Darkhan	48,503.6	61,114.6	109,618.2	20.2	25.5	41.7	90.7
b. Darkhan–Altanbulag							
2. Consultants							
a. Design and supervision consultant	2,481.6	5,790.5	8,272.2	1.0	2.4	4.0	6.8
<b>Subtotal A</b>	<b>50,985.3</b>	<b>66,905.1</b>	<b>117,890.4</b>	<b>21.2</b>	<b>27.9</b>	<b>49.2</b>	<b>97.5</b>
<b>B. Recurrent Costs</b>							
1. PIU (ADB financed)	0.0	1,554.9	1,554.9	0.0	0.7	0.7	1.2
2. PIU (Government financed)	0.0	1,437.8	1,437.8	0.0	0.6	0.6	1.2
<b>Subtotal B</b>	<b>0.0</b>	<b>2,992.7</b>	<b>2,992.7</b>	<b>0.0</b>	<b>1.3</b>	<b>1.3</b>	<b>2.4</b>
<b>Total Investment Cost</b>	<b>50,985.3</b>	<b>69,897.8</b>	<b>120,883.1</b>	<b>21.2</b>	<b>29.2</b>	<b>50.5</b>	<b>100.0</b>
<b>C. Contingencies</b>							
1. Physical <sup>c</sup>	3,581.3	3,345.2	6,926.5	1.5	1.0	2.3	5.0
2. Price <sup>d</sup>	4,883.7	35,524.2	40,407.9	2.0	1.7	4.0	7.7
<b>Subtotal C</b>	<b>8,465.0</b>	<b>38,869.4</b>	<b>47,334.5</b>	<b>3.5</b>	<b>2.8</b>	<b>6.3</b>	<b>12.8</b>
<b>D. Financial Charges During Implementation</b>							
1. Interest during construction	8,235.3	0.0	8,235.3	3.4	0.0	3.4	6.9
2. Commitment charges	1,035.1	0.0	1,035.1	0.4	0.0	0.4	0.8
<b>Subtotal D</b>	<b>9,270.4</b>	<b>0.0</b>	<b>9,270.4</b>	<b>3.8</b>	<b>0.0</b>	<b>3.8</b>	<b>7.8</b>
<b>Total (A+B+C+D)</b>	<b>68,720.7</b>	<b>0.0</b>	<b>9,270.4</b>	<b>28.6</b>	<b>32.0</b>	<b>60.6</b>	<b>120.2</b>

Notes: Numbers may not sum precisely because of rounding.

<sup>a</sup> Includes taxes and duties of \$3.77 million to be financed from ADB loan resources. Such amount does not represent an excessive share of the project cost.

<sup>b</sup> In mid-2018 prices as of 14 March 2018.

<sup>c</sup> Physical contingencies computed at 10% for civil works; and 5% for field research and development training, surveys, and studies. Price contingencies computed at average of 42% on foreign exchange costs and 58% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>d</sup> Interest during construction for the OCR loan has been computed at the 5-year US dollar fixed swap rate plus an effective contractual spread of 0.50% and maturity premium of 0.20%. Commitment charges for the OCR loan are 0.15% per year to be charged on the undisbursed loan amount.

Source: Asian Development Bank estimates.

## D. Allocation and Withdrawal of Loan Proceeds

**Table 8: Allocation and Withdrawal of Loan Proceeds**

No.	Item	Total Amount Allocated for ADB Financing Category	Percentage and Basis for Withdrawal from the Loan Account
1	Civil Works and Consulting Services	49,200,000	100% of total expenditure claimed
2	Project Implementation and Administration	650,000	100% of total expenditure claimed
3	Interest and Commitment Charges	3,810,000	100% of amounts due
4	Unallocated	6,340,000	
	<b>Total</b>	<b>60,000,000</b>	

Source: Asian Development Bank estimates.

## E. Detailed Cost Estimates by Financier

**Table 9: Detailed Cost Estimates by Financier**

Item	ADB		GOM		Total <sup>a</sup> Cost
	Amount	% of Cost Category	Amount	% of Cost Category	
<b>A. Investment Costs<sup>b</sup></b>					
<b>1. Civil works</b>					
a. Ulaanbaatar–Darkhan	41.7	100.0	0.0	0.0	41.7
b. Darkhan–Altanbulag	4.0	100.0	0.0	0.0	4.0
<b>2. Consulting Services</b>					
a. Design and supervision consultant	3.5	100.0	0.0	0.0	3.5
<b>Subtotal (A)</b>	<b>49.2</b>	<b>100.0</b>	<b>0.0</b>	<b>0.0</b>	<b>49.2</b>
<b>B. Recurrent Costs</b>					
1. PIU (ADB financed) <sup>c</sup>	0.7	100.0	0.0	0.0	0.7
2. PIU (Government financed)	0.0	0.0	0.6	100.0	0.6
<b>Subtotal (B)</b>	<b>0.7</b>	<b>53.8</b>	<b>0.6</b>	<b>46.2</b>	<b>1.3</b>
<b>Total Investment Cost</b>	<b>49.9</b>	<b>98.8</b>	<b>0.6</b>	<b>1.2</b>	<b>50.5</b>
<b>C. Contingencies</b>					
1. Physical <sup>d</sup>	2.3	100.0	0.0	0.0	2.3
2. Price <sup>e</sup>	4.0	100.0	0.0	0.0	4.0
<b>Subtotal (C)</b>	<b>6.3</b>	<b>100.0</b>	<b>0.0</b>	<b>0.0</b>	<b>6.3</b>
<b>D. Financial Charges During Implementation<sup>f</sup></b>	<b>3.8</b>	<b>100.0</b>	<b>0.0</b>	<b>0.0</b>	<b>3.8</b>
1. Interest during construction	3.4	100.0	0.0	0.0	3.4
2. Commitment charges	0.4	100.0	0.0	0.0	0.4
<b>Subtotal (D)</b>					
<b>Total (A+B+C+D)</b>	<b>60.0</b>	<b>99.0</b>	<b>0.6</b>	<b>1.0</b>	<b>60.6</b>
<b>% Total Project Cost</b>	<b>60.0</b>	<b>99.0</b>	<b>0.6</b>	<b>1.0</b>	<b>100.0%</b>

ADB = Asian Development Bank, GOM = Government of Mongolia.

Notes: Numbers may not sum precisely because of rounding.

<sup>a</sup> Includes taxes and duties of \$3.77 million to be financed from ADB loan resources. Such amount does not represent an excessive share of the project cost.

<sup>b</sup> In mid-2018 prices as of 14 March 2018.

<sup>c</sup> Salaries, rental, audit, and other related PIU expenditures.

<sup>d</sup> Physical contingencies computed at 10% for civil works.

<sup>e</sup> Price contingencies computed at average of 42% on foreign exchange costs and 58% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>f</sup> Interest during construction for the OCR loan has been computed at the 5-year US dollar fixed swap rate plus an effective contractual spread of 0.50% and maturity premium of 0.20%. Commitment charge for the OCR loan are 0.15% per year to be charged on the undisbursed loan balance.

Source: Asian Development Bank estimates.

## F. Detailed Cost Estimates by Outputs

**Table 10: Detailed Cost Estimates by Outputs**  
(\$ million)

Item	Total Cost <sup>a</sup>	Road Asset Management		Road Condition Improvement		Road Safety	
		Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category
<b>A. Base Costs<sup>b</sup></b>							
<b>1. Civil Works</b>							
a. Ulaanbaatar–Darkhan	41.7	4.6	11.2	19.0	45.62	18.1	43.1
b. Darkhan–Altanbulag	4.0	0.3	5.7	0.6	17.3	3.1	76.9
<b>2. Consulting Services</b>							
a. Design and supervision consultant	3.5	1.1	33.3	1.2	33.3	1.2	33.3
<b>Subtotal (A)</b>	<b>49.2</b>	<b>6.0</b>	<b>12.1</b>	<b>20.8</b>	<b>42.3</b>	<b>22.4</b>	<b>45.5</b>
1. PIU (ADB financed)	0.7	0.0	0.0	0.3	0.0	0.4	63.3
2. PIU (Government financed)	0.6	0.3	50.0	0.3	50.0	0.0	0.0
<b>Subtotal (B)</b>	<b>1.3</b>	<b>0.3</b>	<b>23.1</b>	<b>0.6</b>	<b>46.1</b>	<b>0.4</b>	<b>30.8</b>
<b>Total Investment Cost</b>	<b>50.5</b>	<b>6.3</b>	<b>12.5</b>	<b>21.4</b>	<b>42.4</b>	<b>22.8</b>	<b>45.1</b>
<b>C. Contingencies</b>							
1. Physical contingency	2.3	0.3	12.4	0.8	42.6	1.1	45.1
2. Price contingency	4.0	0.4	12.4	1.8	42.6	1.7	45.1
<b>Subtotal (C)</b>	<b>6.3</b>	<b>0.7</b>	<b>12.4</b>	<b>2.6</b>	<b>42.6</b>	<b>2.8</b>	<b>45.1</b>
<b>D. Financial Charges During Implementation<sup>e</sup></b>							
3. Interest during construction	3.4	0.4	12.4	1.5	42.6	1.5	45.1
4. Commitment charge	0.4	0.0	12.4	0.2	42.6	0.2	45.1
<b>Subtotal (D)</b>	<b>3.8</b>	<b>0.4</b>	<b>12.6</b>	<b>1.6</b>	<b>42.6</b>	<b>1.7</b>	<b>45.1</b>
<b>Total (A+B+C+D)</b>	<b>60.6</b>	<b>7.6</b>	<b>12.6</b>	<b>25.8</b>	<b>42.6</b>	<b>27.2</b>	<b>44.8</b>
<b>% Total Project Cost</b>	<b>100%</b>		<b>12.6</b>		<b>42.6</b>		<b>44.8</b>

Notes: Numbers may not sum precisely because of rounding.

<sup>a</sup> Includes taxes and duties of \$3.77 million to be financed from ADB loan resources. Such amount does not represent an excessive share of the project cost.

<sup>b</sup> In mid-2018 prices as of 14 March 2018.

<sup>c</sup> Physical contingencies computed at 10% for civil works; and 5% for field research and development training, surveys, and studies.

<sup>d</sup> Price contingencies computed at average 42% on foreign exchange costs and 58% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>e</sup> Interest during construction for the OCR loan has been computed at the 5-year US dollar fixed swap rate plus an effective contractual spread of 0.50% and maturity premium of 0.20%. Commitment charge for the OCR loan are 0.15% per year to be charged on the undisbursed loan amount.

Source: Asian Development Bank estimates.

**G. Detailed Cost Estimates by Year****Table 11: Detailed Cost Estimates by Year<sup>f</sup>**

		(\$ million)							
Item		Total Cost <sup>a</sup>	2019 Year 1	2020 Year 2	2021 Year 3	2022 Year 4	2023 Year 5	2024 Year 6	2025 Year 7
A.	Investment Costs <sup>b</sup>								
	1. Civil works	45.7	0.0	0.0	4.8	8.8	10.9	13.1	8.1
	2. Consultants	3.5	0.0	0.3	0.4	0.5	0.8	0.8	0.7
	Subtotal (A)	49.2	0.0	0.3	5.2	9.3	11.7	13.9	8.8
B	Recurrent Costs	1.3	0.0	0.1	0.2	0.2	0.2	0.2	0.3
	Subtotal (B)	1.3	0.0	0.1	0.2	0.2	0.2	0.2	0.3
	Total Investment Cost	50.5	0.0	0.4	5.4	9.5	11.9	14.1	9.1
C.	Contingencies	6.3	0.0	0.0	0.2	0.2	0.4	0.4	5.1
	Subtotal (C)	6.3	0.0	0.0	0.2	0.2	0.4	0.4	5.1
D.	Financial Charges During Implementation <sup>e</sup>	3.8	0.0	0.0	0.1	0.1	0.1	3.4	0.7
	Total (A+B+C+D)	60.6	0.0	0.4	5.7	9.8	12.4	14.6	17.6
	% Total Project Cost	100.0%	0%	1%	9%	16%	20%	24%	29%

<sup>a</sup> Includes taxes and duties of \$3.77 million to be financed from ADB loan resources. Such amount does not represent an excessive share of the project cost.

<sup>b</sup> In mid- 2018 prices as of 14 March 2018.

<sup>c</sup> Physical contingencies computed at 10% for civil works; and 5% for field research and development training, surveys, and studies.

<sup>d</sup> Price contingencies computed at average of 42% on foreign exchange costs and 58% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>e</sup> Interest during construction for the OCR loan has been computed at the 5-year US dollar fixed swap rate plus an effective contractual spread of 0.50% and maturity premium of 0.20%. Commitment charge for the OCR loan are 0.15% per year to be charged on the undisbursed loan amount.

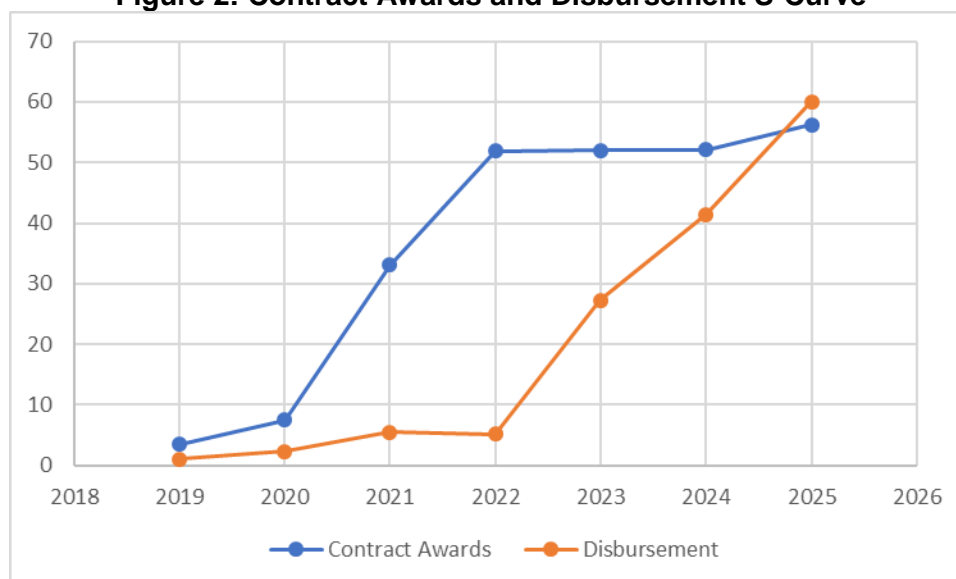
<sup>f</sup> The projections are conservative and are supposed to be overachieved for the early years if the activities proceed as planned.

Source: Asian Development Bank estimates.

## H. Contract and Disbursement S-Curve

23. Figure 2 shows quarterly contract awards and disbursement projections over the life of the project. The S-curve is only for ADB financing and ADB-administered cofinancing, which will be recorded in ADB's systems and reported through e-Ops. Counterpart funds and any other cofinancing are excluded.

**Figure 2: Contract Awards and Disbursement S-Curve**



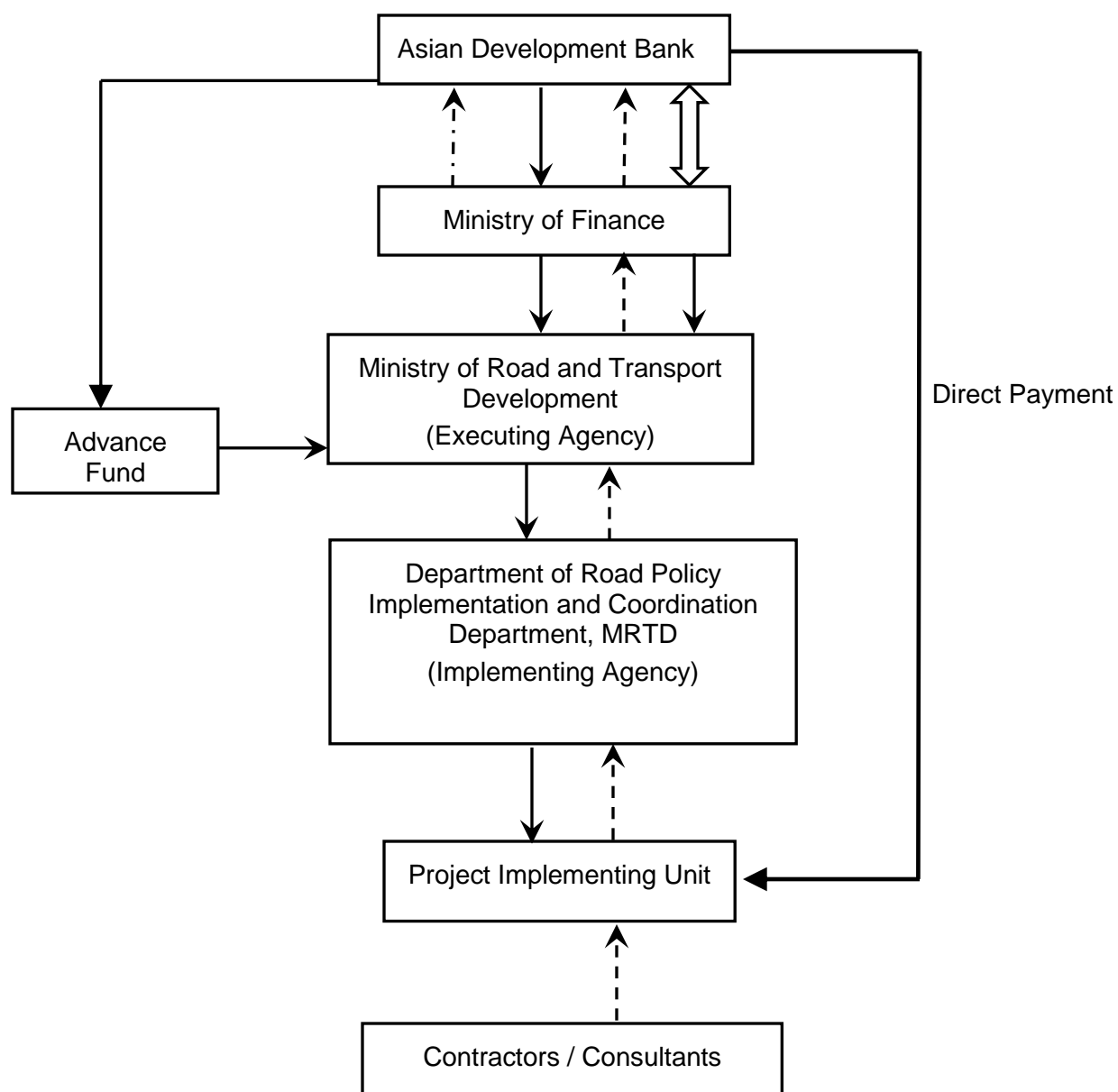
**Table 12: Contract Awards and Disbursement Baseline Projections**

Year	Contract Award					Disbursement					Cumulative	
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total	Contract Award	Disbursement
2019	0.00	0.00	3.46	0.00	<b>3.46</b>	0.00	0.00	0.41	0.60	<b>1.01</b>	3.46	1.01
2020	0.00	0.00	4.07	0.00	<b>4.07</b>	0.00	1.26	0.00	0.00	<b>1.26</b>	7.53	2.27
2021	20.00	5.40	0.00	0.12	<b>25.52</b>	2.54	0.00	0.54	0.13	<b>3.21</b>	33.05	5.48
2022	0.00	18.64	0.16	0.00	<b>18.81</b>	0.69	0.16	5.08	3.73	<b>9.66</b>	51.86	5.15
2023	0.00	0.00	0.00	0.00	<b>0.20</b>	6.35	4.66	0.86	0.20	<b>12.07</b>	52.05	27.22
2024	0.00	0.10	0.00	0.00	<b>0.10</b>	5.59	3.81	1.04	3.81	<b>14.25</b>	52.15	41.47
2025	0.00	0.00	0.00	4.04	<b>4.04</b>	4.60	3.70	3.66	6.58	<b>18.53</b>	56.19	60.00

24. The projection for contract awards includes contingencies and unallocated amounts but excludes interest during construction. The total projected disbursements are equal to the full loan amount of \$60 million, up to 3 months after loan closing.

## I. Fund Flow Mechanism

**Figure 3: Fund Flow**



- Flow of funds
- - - - -> Flow of documents (withdrawal application, claim/invoice)
- . . . -> Flow of funds
- ↔ Loan Agreement
- - - - -> Counterpart funds



## V. FINANCIAL MANAGEMENT

### A. Financial Management Assessment

25. The financial management assessment (FMA) was conducted in March 2017 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 the MRTD, including funds-flow arrangements, staffing, accounting and financial reporting systems, financial information systems, and internal and external auditing arrangements. The primary tool used for the FMA is the ADB's FMA questionnaire including review of relevant financial information and documents, discussion with MOF and MRTD staff, preparation of organizational chart and funds flow diagram.

26. Based on the assessment, the MRTD has experience in implementing infrastructure projects financed by the ADB and other multilateral and bilateral financial institutions, the project will be the first ADB assistance that will be implemented by newly appointed financial management staff in the PIU. Considering that the financial management staff are new, the financial management risk are (i) implementation risk- lack of familiarity with ADB disbursement procedures and requirements which would delay project implementation, (ii) compliance risk—lack of familiarity with ADB financial management requirements, particularly on accounting, reporting and auditing arrangements, and (iii) foreign exchange risk—inadequate experience in managing foreign exchange rate that might increase the financial burden on MRTD.

27. It is concluded that the overall pre-mitigation financial management risk of MRTD and PIU is moderate. The Borrower and the MRTD have agreed to implement an action plan as key measures to address the deficiencies. The financial management action plan is provided in Table 13.

**Table 13: Financial Management Action Plan**

Action	Responsibility	Timing
1. Training on ADB disbursement procedures and requirements	ADB, MRTD, PIU	1 month before first disbursement
2. Training on ADB requirements, including procurement, accounting, reporting, auditing, and foreign exchange risk management	ADB, MRTD, PIU	4 months after effectiveness
3. Recruitment of experienced consultants and skilled accountants to enhance the operational capacities	MRTD	3 months after effectiveness
4. Development of financial management manuals	MRTD	Before loan effectiveness

ADB = Asian Development Bank, MRTD= Ministry of Road and Transport Development, PIU = project implementation unit.

Source: Asian Development Bank.

28. Although the MRTD has performed acceptably in the past, considering changes in the staff due to the 2016 parliamentary elections it needs additional training. It is recommended that training provided by ADB and supported by the supervision consultant should include: (i) a series of financial management workshops and specialized training and re-training for the project financial officers recruited is recommended; (ii) all documents on ADB website relating to financial

management be translated to Mongolian; and (iii) regular reviews of the finances carried out during ADB missions.

## **B. Disbursement**

### **1. Disbursement Arrangements for ADB**

29. The loan proceeds will be disbursed in accordance with ADB's Loan Disbursement Handbook (2017, 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 at [http://wpqr4.adb.org/disbursement\\_elearning](http://wpqr4.adb.org/disbursement_elearning). Project staff are encouraged to avail of this training to help ensure efficient disbursement and fiduciary control.

30. The PIU on behalf of MRTD will be responsible for (i) requesting budgetary allocations for counterpart funds, (ii) collecting supporting documents, and (iii) preparing and sending withdrawal applications through the Ministry of Finance and the MRTD through ADB.

31. **Advance fund procedure.** To facilitate project implementation and fund flow, an advance account may be set up in a commercial bank or Treasury Single Account<sup>17</sup> acceptable to ADB upon loan effectiveness. The currency of the advance account is in US dollar.<sup>18</sup> The advance account is to be used exclusively for ADB's share of eligible expenditures. The MRTD who established the advance account in its name is accountable and responsible for proper use of advances to the advance account.

32. The total outstanding advance to the advance account should not exceed the estimate of ADB's share of expenditures to be paid through the advance account for the forthcoming 6 months. The MRTD may request for initial and additional advances to the advance account based on an Estimate of Expenditure Sheet<sup>19</sup> setting out the estimated expenditures to be financed through the account for the forthcoming 6 months. Supporting documents should be submitted to ADB or retained by the MRTD in accordance with ADB's Loan Disbursement Handbook (2017, as amended from time to time) when liquidating or replenishing the advance account.

33. **Statement of expenditure procedure (SOE).** The SOE procedure may be used for reimbursement of eligible expenditures or liquidation of advances to the advance account. The ceiling of the SOE procedure is the equivalent of \$100,000 per individual payment. Supporting documents and records for the expenditures claimed under the SOE should be maintained and made readily available for review by ADB's disbursement and review missions, upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit.

<sup>20</sup> Reimbursement and liquidation of individual payments in excess of the SOE ceiling should be supported by full documentation when submitting the withdrawal application to ADB.

34. **Direct payment procedure.** The direct payment procedure is a disbursement procedure wherein ADB, at the borrower's request, pays a designated beneficiary directly. Direct payment may apply for large works contracts. A signed withdrawal application must be submitted to ADB

<sup>17</sup> Currently, the MOF is working to establish foreign currency accounts under the TSA. The local currency accounts can be established under the TSA.

<sup>18</sup> The bank charges on the advance account will be financed from the proceeds of the loan.

<sup>19</sup> ADB. 2017. *Loan Disbursement Handbook*. 8A.

<sup>20</sup> SOE forms are available in Appendix 7B of ADB's *Loan Disbursement Handbook* (2017, as amended from time to time).

together with a summary sheet and the required supporting documents.<sup>21</sup> A separate WA is required for each different currency.

35. The payment process to be followed for the civil works contract is as follows:

- (i) The contractor shall submit a request for payment certificate;
- (ii) The supervision consultant shall inspect the works and prepare a payment certificate and submit to the PIU for processing;
- (iii) The construction supervision consultant shall inspect the works and confirm that the works have been completed. The project financial officer of the PIU shall submit a withdrawal application for payment to ADB via the MRTD and MOF after the construction supervision consultant confirms the work has been completed; and
- (iv) ADB shall make a payment directly to the contractor.

36. Before the submission of the first withdrawal application, the borrower should submit 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. The minimum value per withdrawal application is in accordance with the Loan Disbursement Handbook. Individual payments below this amount should be paid (i) by the EA (PIU) and subsequently claimed to ADB through reimbursement, or (ii) through the advance fund procedure, unless otherwise accepted by ADB.

### **C. Accounting**

37. The MRTD, through the PIU will maintain, or cause to be maintained, separate books and records by funding source for all expenditures incurred on the project following cash-based accounting system in accordance with the government's financial regulations. The project financial statements will be prepared in accordance with the government's accounting laws and regulations which are consistent with international accounting principle and practices.

### **D. Auditing and Public Disclosure**

38. The MOF, with the request from the MRTD, will cause the detailed project financial statements to be audited in accordance with relevant laws and regulations as well as International Standards on Auditing 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 MRTD, through the PIU.

39. 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 were used only for the purpose(s) of the project; and (iii) whether the borrower or executing agency was in compliance with the financial covenants contained in the legal agreements.

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<sup>21</sup> The list of required supporting documents is available in Chapter 9 of ADB's *Loan Disbursement Handbook* (2017, as amended from time to time).

40. 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.

41. MRTD and the PIU 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.<sup>22</sup> ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the borrower), 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.

42. Public disclosure of the audited project financial statements, including the auditor's opinion on the project financial statements, will be guided by ADB's Public Communications Policy 2011.<sup>23</sup> 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 their acceptability by posting them on ADB's website. The management letter will not be disclosed.<sup>24</sup>

## VI. PROCUREMENT AND CONSULTING SERVICES

### A. Advance Contracting

43. All advance contracting may be undertaken in conformity with ADB Procurement Guidelines (2015, as amended from time to time), ADB's Guidelines on the Use of Consultants (2013, as amended from time to time), and applicable Mongolian laws and regulations. The MOF is undertaking reform to enable advance contracting with support from an ADB TA, and the advance contracting activities will be undertaken within available budget allocated for the project. The issuance of invitations to bid under advance contracting will be subject to ADB approval. It was explained to the borrower, executing agency, the implementing agencies and the PIU that advance contracting may include tendering for civil works contract packages, and recruitment of consultants. The issuance of invitations to bid and bidding documents under advance procurement action will be subject to ADB approval.

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

44. All procurement of goods and works will be undertaken in accordance with ADB's Procurement Guidelines (2015, as amended from time to time). International competitive bidding (ICB) procedures will be used for civil works contracts estimated to cost \$5 million or more.

<sup>22</sup> 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 advance 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 advance 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.

<sup>23</sup> Public Communications Policy: <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>

<sup>24</sup> ADB. 2011. *Public Communications Policy*. Paragraph 97(iv) and/or 97(v). This type of information would generally fall under public communications policy exceptions to disclosure.

National competitive bidding (NCB) will be used for civil works contracts estimated to cost below \$4,999,999.

45. An 18-month procurement plan indicating threshold and review procedures, goods, works, and consulting service contract packages and national competitive bidding guidelines is in Table 14.

46. All consultants financed by ADB will be recruited according to ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).<sup>25</sup> The terms of reference for all consulting services are detailed in Appendix 2. An estimated 422 person-months (65 international and 357 national person-months) of consulting services are required to (i) facilitate construction supervision, project management and implementation, (ii) provide institutional strengthening, and (iii) required external monitoring. The consulting firms will be engaged using the quality- and cost-based selection (QCBS) method with a standard quality–cost ratio of 90:10.

### C. Procurement Plan

47. The procurement plan is prepared in accordance with the Mongolia procurement template and in coordination with the EA and IA.

**Table 14: Procurement Plan**

<b>Basic Data</b>	
<b>Project Name:</b> Regional Road Development and Maintenance	
<b>Project Number:</b> 48186-005	<b>Approval Number:</b>
<b>Country:</b> Mongolia	<b>Executing Agency:</b> Ministry of Road and Transport Development
<b>Project Procurement Classification:</b> B	<b>Implementing Agency:</b> Department of Road Policy Implementation and Coordination, Ministry of Road and Transport Development, MRTD
<b>Procurement Risk:</b> Average	
<b>Project Financing Amount:</b> \$ 60.60 <b>ADB Financing:</b> \$60.0 million <b>Non-ADB Financing:</b> \$0.60 million	<b>Project Closing Date:</b> 30 Jun 2026
<b>Date of First Procurement Plan</b> 15 Sep 2017:	<b>Date of this Procurement Plan:</b> 16 Mar 2018

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

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

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

<sup>25</sup> Checklists for actions required to contract consultants by method available in e-Handbook on Project Implementation at: <http://www.adb.org/documents/handbooks/project-implementation/>.

Procurement of Goods and Works		
Method	Threshold	Comments
International Competitive Bidding (ICB) for Works	\$5,000,000	The first bidding document for prior review. This will be used as master bid document
National Competitive Bidding (NCB) for Works	Beneath that stated for ICB, Works	prior review
Shopping for Works	Below \$100,000	

Consulting Services	
Method	Comments
Quality and Cost Based Selection (QCBS)	Full Technical Proposal; 90:10

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

49. The following table lists 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	Comments
CW	Road rehabilitation and maintenance						
CW1	UB-Darkhan	44.04	ICB	Prior	1S1E	Q3 2019	1 package 2 lots
	CW1.1 (Km 19–Km 100)	25.40					
	CW1.2 (Km 100–Km 212)	18.64					
CW2	Darkhan-Altanbulag (Km 227–Km 345)	4.00	NCB	Prior	1S1E	Q4 2019	

## 3. Consulting Services Contracts

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

Package Number	General Description	Estimated Value	Recruitment Method	Review (Prior / Post)	Advertisement (quarter/year)	Type of Proposal	Comments
CS1	Design and Construction Supervision Consultant	3,458,500	QCBS	Prior	Q1 2019	FTP	90:10

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

51. 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.

Package Number	General Description	Estimated Value	Recruitment Method	Review (Prior / Post)	Advertisement (quarter/year)	Type of Proposal	Comments
None.							

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

52. The following table provides an indicative list of works and consulting services contracts over the life of the project, other than those mentioned in previous sections.

Works							
Package Number	General Description	Estimated Value (\$ million)	Procurement Method	Review [Prior / Post/Post (Sampling)]	Bidding Procedure	Advertisement Date	Comments
None							

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

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

### 1. Awarded and On-going Contracts

Works							
Package Number	General Description	Estimated Value	Awarded Contract Value	Procurement Method	Advertisement Date	Date of Approval of Contract Award	Comments
None							

## D. Non-ADB Financing

54. 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

### A. Regulation and Reference Documents

55. The procedures to be followed for national competitive bidding shall be those set forth in the Public Procurement Law of Mongolia of 1 December 2005, effective 1 February 2006, as amended in February 2007; July 2009; and February, June and December 2011 (hereinafter

referred to as PPLM), with the clarifications and modifications described in the following paragraphs required for compliance with the provisions of the ADB Procurement Guidelines.

## **B. Procurement Procedures**

### **1. Eligibility**

56. The eligibility of bidders shall be as defined under section I of the Procurement Guidelines; accordingly, no bidder or potential bidder should be declared ineligible for reasons other than those provided in section I of the Guidelines, as amended from time to time.

57. Government-owned enterprises in Mongolia shall be eligible for projects only if they can establish that they: (i) are legally and financially autonomous; (ii) operate under the principles of commercial law; and (iii) are not dependent agencies of the Borrower, Beneficiary, Recipient Executing Agency and/or the Implementing Agency.

### **2. Participation of Foreign Bidders**

58. International bidders from eligible countries of ADB shall be allowed to participate in local procurement and may not be denied participation due to nationality.

### **3. Preferences**

59. No domestic preference shall be given for domestic bidders and for domestically manufactured goods.

### **4. Prequalification and Registration**

60. Prequalification is discouraged for procurement contracts using NCB. When used, particularly for works contracts, an individual prequalification exercise is acceptable for each contract as is the use of a registration system (or approved standing list) of contractors based on criteria such as experience, financial capacity, and technical capacity. Foreign bidders from eligible countries must, however, be allowed to register and to bid without unreasonable cost or additional requirements.

### **5. Rejection of All Bids and Rebidding**

61. All bids shall not be rejected, or new bids invited without ADB's prior written concurrence.

62. No bid shall be rejected merely on the basis of a comparison with the estimated cost or budget ceiling without ADB's prior written concurrence (with specific reference to Article 30 of the PPLM).

## **C. Bidding Documents**

### **6. Use of bidding documents**

63. National Standard Bidding Documents Goods and Works that have been approved for procurement in ADB-financed projects shall be used.



## **7. Language**

64. Bidding documents may be prepared in other languages, but a copy of the bidding documents must be made available in English and submitted to ADB for review.

## **8. Bid Validity**

65. Bidders shall be requested to extend the validity of their bids only under exceptional circumstances and the Executing or Implementing Agency, as the case may be, shall communicate such request for extension to all bidders before the date of expiry of their bids. When the procurement is subject to ADB's prior review, the Executing or Implementing Agency, as the case may be, shall obtain in a timely manner the prior written concurrence of ADB for the extension of the bid validity period.

## **9. Bid Evaluation**

66. Evaluation and qualification criteria, and submission requirements, to be used in each bidding activity shall be clearly specified in the bidding documents. The evaluation of bids shall be done in strict adherence to the criteria specified in the bidding documents.

67. Negotiations with bidders shall not be undertaken before award of contract, except as provided in Paragraph 2.63 of ADB's Procurement Guidelines. A bidder shall not be required, as a condition for award, to undertake obligations not specified in the bidding documents or otherwise to modify its bid as originally submitted.

68. At the same time that notification on award of contract is given to the successful bidder, the results of the bid evaluation shall be posted on a well-known freely accessible website (namely Mongolia's Ministry of Finance e-procurement website: [www.e-procurement.mn](http://www.e-procurement.mn)) identifying the bid and lot numbers and providing information on the: (i) name of each bidder that submitted a bid; (ii) bid prices as read out at bid opening; (iii) names of bidders whose bids were rejected and the reasons for their rejection; and (iv) name of the winning bidder, and the price it offered, as well as the duration and summary scope of the contract awarded. The Executing Agency or Implementing Agency, as the case may be, shall respond in writing to unsuccessful bidders who seek explanations on the grounds on which their bids were not selected.

## **10. ADB Policy Clauses**

69. 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.

70. A provision shall be included in all bidding documents for NCB works and goods contracts financed by ADB stating that the Borrower shall reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for the contract in question.

71. A provision shall be included in all bidding documents for NCB works and goods contracts financed by ADB stating that 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 or any integrity violation in competing for, or in executing, ADB-financed contract.

#### D. Consultant's Terms of Reference

72. The outline terms of reference for consulting services are in Appendix 2.

#### E. Detailed Implementation Arrangements

The executing agency (EA) will be the Ministry of Road Transport Development (MRTD). The EA will form a steering committee<sup>26</sup> (comprising chairman, secretary and its members), chaired by the State Secretary, MRTD, and comprising representatives of the MRTD, MOF, and Ministry of Environment and Tourism and relevant state agencies.<sup>27</sup> A Project Implementation Unit (PIU) will be procured and established by MRTD with guidance from the MOF and report to the MRTD. Road Policy Implementation and Coordination Department of MRTD will act as the implementation agency (IA). The PIU will be supported by the PMCBC.

73. The project will be implemented in seven years from 2019–2025. The EA will commence the recruitment and appointment of PIU staff in June 2018. The EA will start preparation for the consultant selection for the PMCBC and DCSC in July 2018. Draft terms of reference and cost estimates were agreed in the loan fact-finding mission in Mar 2018 and are included in Appendix 2. The implementation arrangements are summarized in Table 15.

**Table 15: Implementation Arrangements**

Aspects	Arrangements		
Implementation period	January 2019–December 2025		
Estimated completion date	31 December 2025		
Estimated loan closing date	30 June 2025		
<b>Management</b>			
(i) Oversight body/Steering Committee	Project Steering Committee (comprising composing chairman, secretary and its members)		
(ii) Executing agency	Ministry of Road and Transport Development		
(iii) Key implementing agencies	Road Policy Implementation and Coordination Department of the Ministry of Road and Transport Development		
(iv) Implementation unit	Project Implementation Unit appointed by Ministry of Road and Transport Development, 8 staff		
Procurement (Asian Development Bank financed contract packages)	International competitive bidding and national competitive bidding	3 contracts <sup>28</sup>	\$48.0million
Consulting services	Quality- and cost-based selection (90:10)	1 contract 422 person-months	\$3.5 million

<sup>26</sup> Non-staffed unit responsible for steering projects through effective policy and operational guidance provided to PIU and project director in line with its rights and responsibilities that are prescribed in Article 12.1 of this Regulation, as well as oversight of project implementation, and coordination within and between sectors *MOF Resolution Number 196*.

<sup>27</sup> Should ministerial responsibilities for roads and other aspects of the project implementation arrangements be affected by the ongoing government restructuring, the arrangements will be updated accordingly.

<sup>28</sup> The project can apply the procurement guidelines of 2015, or the revised version of 2017.

Aspects	Arrangements		
Project implementation and management	ADB financed		\$0.65 million (as recurrent cost)
Project implementation and management	Government financed		\$0.60 million (as recurrent cost)
Advance contracting and/or retroactive financing	Consulting services and civil works		
Disbursement	The loan proceeds will be disbursed in accordance with ADB's <i>Loan Disbursement Handbook</i> (2017, as amended from time to time) and detailed arrangements agreed upon between the government and ADB.		

Source: Asian Development Bank.

## VII. SAFEGUARDS

74. **Environment (category B).** The project is classified category B for the environment. The initial environmental examination (IEE)<sup>29</sup> is prepared and complies with ADB's policies and requirements, including ADB's Safeguard Policy Statement (2009). It identifies potential adverse impacts, which would be mainly during construction phase, including construction noise and dust, and air quality during asphalt surfacing. Those impacts can be adequately mitigated. Meaningful public consultation was done in accordance with ADB's Safeguard Policy Statement. The MRTD is committed to implement the environmental management plan of the project and the project specific grievance redress mechanism (GRM). The IEE will be posted on the ADB website before the board approval. An initial climate risk is screened as low.

75. The PIU, which needs to be established under MRTD, will be responsible for implementation of EMP, EMoP, GRM and all other environmental safeguards issues. The PIU will engage an Environmental and Social Officer, and LIEC to carry out all the tasks as agreed on loan covenants and to meet all the environmental safeguard requirements under ADB SPS (2009).

76. **Involuntary resettlement (category B).** For output 1, a due diligence report has been prepared, confirming that there are no land acquisition or resettlement impacts as all the related works are limited to the existing right of way (ROW). All construction related impacts will be mitigated by the contractor. A resettlement framework is prepared in accordance with the ADB's SPS (2009) and national laws and regulations to guide the preparation of resettlement plans for output 2 when subprojects are identified and to ensure project impacts remain within category B if not C. The resettlement framework (RF)<sup>30</sup> was posted on the ADB website on 9 June 2017. The MRTD is committed to implement the RF and prepare RP, when required. The project specific grievance redress mechanism (GRM) has been agreed with the MRTD and is included in the SDGAP and resettlement framework.

77. **Indigenous peoples (category C).** Based on due diligence, there are no ethnic minorities affected by the project. The two project aimags do not include any separate ethnic minority within the definition of ADB's SPS (2009).

<sup>29</sup> Initial Environmental Examination (accessible from the list of linked documents in Appendix 11).

<sup>30</sup> Resettlement Framework (accessible from the list of linked documents in Appendix 2).

78. **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**

79. A social, poverty and gender analysis was undertaken in accordance with ADB guidelines. Although the national poverty rate fell from 38.7 percent in 2010 to 27.4% in 2012 and to 21.6% in 2014, it is high for an upper-middle-income country<sup>31</sup>. Especially poverty rate of project aimags are 22.2%, which is higher than the national average of 21.6 in Mongolia. Much of the poverty stems from unemployment, absence of local markets, and lack of education. Poor condition of existing roads aggravates the persistent poverty conditions particularly in rural areas. The rural population's access to social services and major markets in the region and aimags is limited. Travelling is costly and uncomfortable. Local farmers and herders, in absence of access to the market are forced to sell their products at lower prices.

80. The status of women in the project area is similar to national counterpart. Lack of higher education and unemployment seem to be key issues in rural areas. Out of 102 households surveyed, 58% respondents spend between MNT1 to 3 million for education by renting rooms in urban areas due to lack of good transport. The project will provide easier and better access to basic services such as education and health, thereby reducing family's annual expenditure and improve quality of life for residents. The strategic location of the project sites, relatively close to Mongolian and Russian border offers opportunities for local development in trade and agriculture sector. The project is categorized effective gender mainstreaming (EGM) in accordance with the ADB gender categorization. The gender action plan (GAP) and SDGAP will ensure equal participation and benefit sharing by women with 10% of unskilled construction related jobs with equal pay as men and other income generating activities with improved road conditions and livelihood skill trainings. The likely impacts from HIV/AIDS/STI and trafficking faced by women during construction period will be addressed through prevention measures included in the GAP and SDGAP. The project beneficiaries comprise local population of target aimags approximately 123,000 residents and 35,000 households, which will receive improved, low cost and safe transportation.

### **A. Social Development Action Plan**

#### **1. General**

81. A Social Development and Gender Action Plan (SDGAP)<sup>32</sup> is prepared to ensure inclusive project benefits for affected communities and to avoid or mitigate adverse impacts of the Project. The SDGAP aims to protect or enhance the quality of benefits to vulnerable groups. The specific measures outlined in the SDGAP that ensure equitable benefits to the vulnerable groups are developed based on a detailed poverty and gender analysis undertaken within the project impact zone. The overall objective of the SDGAP is that the project investment optimizes potential benefits with appropriate consideration to gender, project affected people, poor and vulnerable groups, labor issues and mitigates potential risks of HIV/AIDS and human trafficking and road safety concerns. The SDGAP includes proposed actions, targets, timing and monitoring indicators is attached herewith as Appendix 3.

<sup>31</sup> World Bank. "Poverty Headcount Ratio at National Poverty Lines (% of population)." Washington, DC. <http://data.worldbank.org/country/Mongolia>.

<sup>32</sup> The SDGAP is part of the Poverty and Social Assessment and Social Development Action Plan, accessible from the list of supplementary linked documents in Appendix 2 of the RRP.

82. The SDGAP will be treated as an integral part of the Project and will be implemented by the PIU. The social development specialist (consultant) at PIU level will be responsible for planning, implementation and monitoring of the SDGAP. The field level implementation will be handled by a qualified outreach officers at soum<sup>33</sup> level (there will be 2 local staff members at respective aimags, Tuv, Darkhan, and Selenge) that will be responsible for implementation of the SDGAP. They will work closely with local soum and aimag level authorities, NGO's <sup>34</sup>and other stakeholders. The staff at PIU and field levels will ensure that collaboration is done with specialized institutions such as local health centers, police, schools and NGO's to handle issues like skill training, HIV/AIDS and human trafficking. The PIU and national social development consultant will be responsible for internal monitoring of SDGAP implementation. The field staff will report to PIU staff monthly. The PIU social development specialist (consultant) through the IA, will update ADB on semi-annually on the progress and results of the implementation of the SDGAP.

## **2. Community Consultation and Information Dissemination Strategy**

83. The project has a clear strategy to ensure active participation of local communities and households in the overall project cycle. Proactive efforts will be made to reach out to households to provide timely and complete project information, in a language and means that is easily understandable to local communities. During the construction period, priority will be given to the poor and vulnerable households and ensuring their participation in the project.

## **3. Community/Households Meetings**

84. The project, with the help of local staff at soum level, will reach out to local households to provide them with timely information about the construction activities, schedules and such other project related information that will help them to assess if the construction will have any negative impacts for these households. Such community meetings will also serve to plan various social development and gender activities that are summarized in the SDGAP.

## **4. Information Boards at Aimag and Soum Administration Buildings**

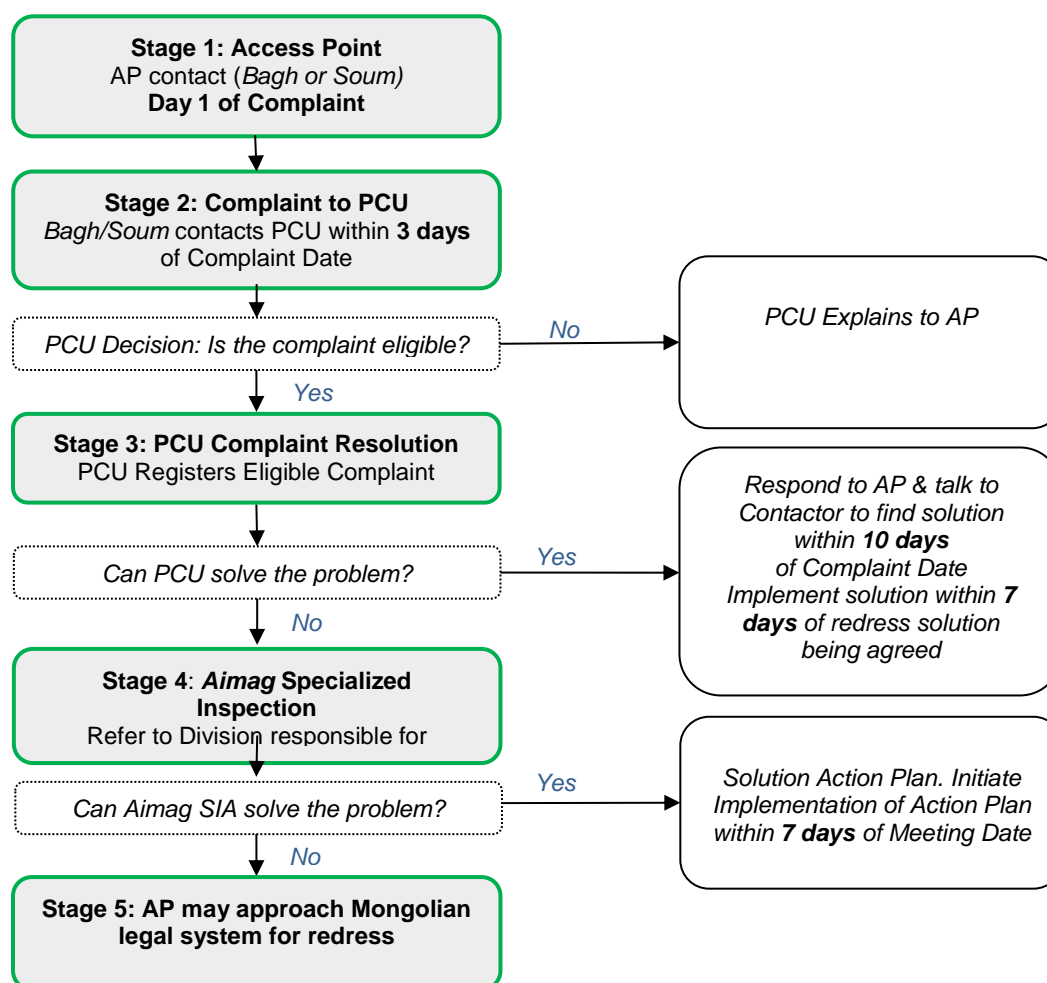
85. A project information dissemination board will be established in collaboration with the two (2) local administration of Tuv, Darkhan and Selenge aimags.

## **5. Grievance Redress Mechanism**

86. The local communities will be informed about project information by COMO and is encouraged to communicate with local COMO officer for project information and for submitting their suggestions for grievances, if any. This GRM is for both beneficiaries and APs. The mechanism has been discussed during public consultations and is shown in Figure 4.

<sup>33</sup> A soum is a district, the second-level administrative subdivision of Mongolia. The 21 provinces (or aimags) of Mongolia are divided into 329 districts.

<sup>34</sup> During consultation with local officials, it has been identified that some international and local NGOs such as World Vision, Rural Women's Development Association, had collaborated with local authorities.

**Figure 4: Grievance Redress Mechanism**

AP = affected persons, PCU = project complaint unit, SIA = social impact assessment.

## 6. Target Area

87. The target (affected) area includes territory of three soums and two aimag centers along the project road. The social safeguard and gender activities defined in the SDGAP will be carried out in this area.

## 7. SDGAP budget and cost

88. There will be two Community Outreach Officers, one for each aimag responsible for ensuring consultation, participation of local residents and organizational arrangements of trainings described in the SDGAP in collaboration with PIU Social Development and Gender Specialist (Consultant). Total budget and cost for the implementation of SDGAP activities is \$117,000. These costs will be included within the PIU cost.

89. Out of the total cost of \$117,000, \$10,800 is allocated for the remuneration cost of the community outreach officers.

**Table 16: Breakdown of Remuneration Cost for Locally Hired Community Outreach Officers**

Project Aimags	Timeline	Per Person/Month	Total
Tuv and Darkhan (Ulaanbaatar–Darkhan section)	9 person-months (2019–2021)	600	5,400
Darkhan and Selenge (Darkhan–Altanbulag section)	9 person-months (2019–2021)	600	5,400

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

### A. Project Design and Monitoring Framework

Impact the Project is Aligned with Inclusive economic growth promoted by enhanced local, regional, and international connectivity in Mongolia (Action Program of the Government of Mongolia for 2016–2020) <sup>a</sup>			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
<b>Outcome</b> Efficiency and safety of road transport within the project area and between countries improved.	By 2030 a. Average vehicle travel time from Ulaanbaatar to Altanbulag reduced by at least 10% (2016 baseline: 300 minutes)  b. Traffic accidents reduced by 15% in 3 project <i>aimags</i> <sup>b</sup> (2017 baseline: 75 deaths and 191 injured)	a. Project progress and completion reports  b. National police statistics	Government faces unexpected political and financial barriers in the adoption of sustainable road maintenance and maintenance funding concepts.
<b>Outputs</b> 1. Road asset management capacity improved  2. Road condition improved	By 2025 1a. RAM system established and used in planning, budgeting, implementation, and evaluation (2017 baseline: no system in place).  1b. At least 30 staff including at least 50% women who attended training report improved skills (2017 baseline: 0 and not applicable).  2a. The 311 km Ulaanbaatar–Altanbulag road section rehabilitated to good condition or international roughness index of 4 or below (2017 baseline: 0 km).  2b. 400 people, of which at least 50% women, participated in	1a. MRTD annual road maintenance report  1c. PIU's quarterly progress reports  2a. PIU's quarterly progress reports  2b. PIU's quarterly progress reports	Newly recruited PIU staff with limited knowledge of ADB procedures and O&M requirements may lead to implementation delay.

3. Road safety improved	<p>training on small businesses and income generation methods (2017 baseline: 0 and not applicable).</p> <p>3a. Road safety facility including road markings, barriers, and guide posts rehabilitated or installed in 311 km Ulaanbaatar–Altanbulag road section (2017 baseline: 0 km).</p> <p>3b. 800 residents (at least 30% women) reported on the improved awareness on road safety and related activities as a result of road safety training (2017 baseline: 0 and not applicable)</p> <p>3c. 160 school teachers (at least 50% women) trained as trainers on road safety and ready to deliver trainings to school students (2017 baseline: 0 and not applicable)</p>	<p>3a. PIU's quarterly progress reports</p> <p>3b. PIU's quarterly progress reports</p> <p>3c. PIU's quarterly progress reports</p>	
<p><b>Activities with Milestones</b></p> <p><b>1. Road asset management capacity improved</b></p> <p>1.1 Define and establish RAM system (Q3 2019)</p> <p>1.2 Conduct training in asset management and maintenance (Q4 2019)</p> <p>1.3 Conduct road condition and traffic surveys (Q2 2019)</p> <p>1.4 Prepare and design road maintenance program (Q3 2020)</p> <p>1.5 Pilot a performance-based arrangement for road maintenance (Q1 2022)</p> <p><b>2. Road condition improved</b></p> <p>2.1 Start road improvement works (Q2 2020)</p> <p>2.2 Complete road improvement works (Q3 2022)</p> <p>2.3 Implement pilot maintenance works (Q3 2022–Q3 2025)</p> <p><b>3. Road safety improved</b></p> <p>3.1 Conduct safety audit on detailed design (Q3 2019)</p> <p>3.2 Conduct road safety training (Q4 2019–Q4 2020)</p> <p>3.3 Conduct post-construction audit (Q4 2023)</p> <p><b>Project Management Activities</b></p> <p>Recruit PIU specialists (Q4 2018)</p> <p>Recruit design and construction supervision consultant (Q3 2019)</p> <p>Award civil works contracts (Q3 2019–Q2 2021)</p>			
<p><b>Inputs</b></p> <p>ADB: \$60,000,000 (loan), \$700,000 (technical assistance grant)</p> <p>Government: \$600,000</p>			
<p><b>Assumptions for Partner Financing</b></p> <p>Not applicable.</p>			

ADB = Asian Development Bank, km = kilometer, MRTD = Ministry of Road and Transport Development, O&M = operation and maintenance, PIU = project implementation unit, Q = quarter, RAM = road asset management.

<sup>a</sup> Government of Mongolia. 2016. *Action Program of the Government of Mongolia for 2016–2020*. Ulaanbaatar. [http://www.mfa.gov.mn/wp-content/uploads/2015/06/2016-2020\\_Gov\\_AP\\_Eng\\_Revised.pdf](http://www.mfa.gov.mn/wp-content/uploads/2015/06/2016-2020_Gov_AP_Eng_Revised.pdf) (section 2.121).

<sup>b</sup> Provincial administrative unit in Mongolia.

Source: Asian Development Bank.

## B. Monitoring

90. **Project performance monitoring.** The project performance management system (PPMS) indicators, their relevance, and monitoring practicalities will be discussed with the



executing agency and project beneficiaries during project implementation. Disaggregated baseline data for output and outcome indicators gathered during project processing will be updated and reported semiannually through progress reports of the PIU and after each ADB review mission. These semiannual reports will provide information necessary to update ADB's project performance reporting system.<sup>35</sup> At the start of project implementation, the PIU, with the PMCBC, will develop integrated PPMS procedures to generate data systematically on the inputs and outputs of the components, as well as the indicators to be used to measure the project's impact and outcome considering the components' scope. The PIU and PMCBC will be responsible for monitoring and reporting on project performance. The basis for performance monitoring will be the design and monitoring framework, which identifies performance targets for the impact, outcomes, and outputs of the project. By collecting data from the sources identified in the design and monitoring framework, the PIU will be able to report on an annual basis the performance of the project. Specific reporting requirements will be set out in the agreement between ADB and the Government. The PIU will collect the data, calculate the indicators, analyze the results, and prepare a brief report describing the extent to which the project is generating the intended outputs and outcomes, as well as the overall impact on the project municipalities. The relevance and practicability of data collection for indicators was confirmed with the PIU and the PMCBC. Meanwhile, the agreed socioeconomic and environmental indicators to be used will be further enhanced to measure project impacts. The PIU and PMCBC agreed and confirmed that they will (i) refine and integrate the PPMS framework at the start of project implementation; (ii) confirm that targets are achievable; (iii) develop recording, monitoring, and reporting arrangements; and (iv) establish systems and procedures no later than six months after project inception.

91. **Compliance monitoring.** The executing agency the PIUs and the PMCBC, will conduct compliance monitoring, submit reports and information to ADB concerning the use of the loan proceeds, project implementation, project implementation performance, and compliance of loan and project covenants. These reports will include (i) semiannual progress reports on project implementation; and (ii) midterm adjustment report, and (iii) a project completion report, which should be submitted not later than three months after the completion of the project facilities. The compliance status of loan and project covenants will be reported and assessed through the semiannual progress report. ADB review missions will verify these statuses.

92. **Safeguards monitoring.** For social safeguards, output 1 doesn't incur any LAR impacts. For output 2, RF is prepared to guide preparation of RP. The PIU social development specialist will conduct reviews and summarize the progress into quarterly project progress reports on any temporary and construction related impacts. PMCBC social development, gender and resettlement consultant will provide oversight and submit the findings to ADB through PMCBC the quarterly report and any non-compliance issues if found in a separate report. For output 2, a RF is prepared to guide preparation of RP for impacts if any and will include monitoring by PIU and the consultants. For environmental safeguards, the PIU Environment and Social Officer, with support from the LIEC, will conduct regular environment safeguards monitoring throughout the project.

93. **Gender and social dimensions monitoring.** The PIU and national social development consultant will be responsible for internal monitoring of GAP and social development action plan (SDAP) implementation. The field staff (2 community outreach officers) will report to PIU staff monthly. The PIU social development specialist (consultant) through the IA, will provide summary

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<sup>35</sup> ADB's project performance reporting system is available at: <http://www.adb.org/Documents/Slideshows/PPMS/default.asp?p=evaltool>.

to ADB through quarterly progress reports and semi-annually on the detailed progress and results of the implementation of the GAP and SDAP.

### **C. Evaluation**

94. ADB, executing agency and implementing agencies will undertake a semiannual review mission to evaluate the progress of project implementation. ADB, executing agency and implementing agencies will undertake a comprehensive midterm review two years after the start of project implementation to have a detailed evaluation of the scope, implementation arrangements, resettlement, achievement of scheduled targets, and progress on the agenda for policy reform and capacity building measures. Feedback from the PPMS activities will be analyzed. Within three months of physical completion of the project, the PIU will submit a project completion report to ADB.<sup>36</sup>

### **D. Reporting**

95. The PIU will provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions, (c) updated procurement plan, and (d) updated implementation plan for the next 12 months; and (iii) annual environmental monitoring reports; (iv) a project completion report within 6 months of physical completion of the project, including environmental completion report and acceptance if any. To ensure that projects will continue to be both viable and sustainable, project accounts and the executing agency audited financial statement together with the associated auditor's report, should be adequately reviewed.

### **E. Stakeholder Communication Strategy**

96. Project information will be communicated through public consultation, information disclosure mechanism in ADB's and government's website, meetings, interviews, focus group discussions, and community consultation meetings, in accordance with ADB's requirements of information disclosure policy. Consultations with communities have taken place and will continue at different points in the preparation of the project within the components and will be designed not only to inform people about the component or specific activities related to its preparation and implementation, but also to enable people in the community to ask questions, make suggestions, state preferences, and express concerns. Special attention will be paid to the participation of women and any other vulnerable groups, such as the poor during further consultation.

## **X. ANTICORRUPTION POLICY**

97. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project.<sup>37</sup> All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency, PIU 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.<sup>38</sup> To support these efforts, relevant provisions are included in the loan agreement and the bidding

<sup>36</sup> Project completion report format available at: <http://www.adb.org/Consulting/consultants-toolkits/PCR-Public-Sector-Landscape.rar>.

<sup>37</sup> Anticorruption Policy: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>.

<sup>38</sup> ADB. ADB's Integrity Office web site: <http://www.adb.org/integrity/unit.asp>.

documents for the project.

98. To support these efforts, relevant provisions are included in the loan agreement and the bidding documents for the project.

## **XI. ACCOUNTABILITY MECHANISM**

99. People who are, or may in the future be, adversely affected by the project may submit 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.<sup>39</sup>

## **XII. RECORD OF CHANGES TO THE PROJECT ADMINISTRATION MANUAL**

100. All revisions and updates during the course of implementation are 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.

<b>No.</b>	<b>PAM Changes/Updates</b>	<b>Date</b>	<b>Remarks</b>
1	Initial draft	1 May 2017	Fact finding mission
2	Second draft	July 2017	SRM
3	Third draft	16 Mar 2018	Post loan fact-finding mission
4	Fourth draft	24 April 2018	Loan negotiations
5	Fifth draft	8 June 2018	Board circulation

Updated and confirmed by:

**Mr. R.Mergen**  
Director General  
Policy and Planning Department  
Ministry of Road and Transport Development

**Mr. Masahiro Nishimura**  
Senior Transport Specialist  
East Asia Department  
Transport and Communications Division  
Asian Development Bank

<sup>39</sup> Accountability Mechanism. <http://www.adb.org/Accountability-Mechanism/default.asp>.

### SUMMARY OF PROCUREMENT ASSESSMENT AND RECOMMENDATIONS FOR PROJECT IMPLEMENTATION

Major Risks/ Capacity constraints	Recommended actions/Mitigation of Risks	Responsible parties
<b>General recommendations for general procurement environment</b>		
<ul style="list-style-type: none"> <li>The lack of capacity of procurement market</li> <li>The lack of capacity of private companies and small businesses to successfully participate in procurement</li> </ul>	<ul style="list-style-type: none"> <li>Organize road show on procurement</li> <li>Hold pre-bid meetings</li> <li>Apply correct criteria for bidders in bidding documents</li> <li>Do procurement market research</li> <li>Organize integrity training</li> </ul>	ADB/EA/PIU/TA
<b>General recommendations for the Ministry of Road and Transport Development and the Procurement Division of Agency for Policy Coordination on State Property</b>		
<ul style="list-style-type: none"> <li>The lack of experience and capacity throughout all phases of Procurement and project management</li> <li>Reluctance to accept ADB procurement guidelines that overrules the national Procurement law</li> </ul>	<ul style="list-style-type: none"> <li>Develop systematic capacity building plan on for project and procurement management</li> <li>Daily assistance to EAs from PIU or direct involvement of PIU staff to the adherence of ADB procedure. Additional assistance to PIU for the contract performance monitoring and development of technical specification and TORs may be considered.</li> <li>Let the EA know of ADB prior and post review procedure on procurement, use PCMR and CRAM for procurement monitoring.</li> <li>Reinforce understanding and compliance with ADB guidelines;</li> <li>Highlight ADB procurement guidelines differences from Public procurement law.</li> </ul>	ADB/EA/PIU/TA
<b>Specific Recommendations for the Project Implementation Unit</b>		
<ul style="list-style-type: none"> <li>ADB Project procurement may receive lower priority in comparison to the public procurement due to heavy workloads at EAs.</li> <li>Lack of familiarity to ADB procedure</li> <li>Lack of hands-on project management experience</li> <li>Lack of commitment due to ADB project procurement being seen as additional duties not included at EA officers TORs.</li> </ul>	<ul style="list-style-type: none"> <li>Hire PIU staff that are highly qualified and experienced at ADB procedure /Project management to ensure compliance with relevant procurement policies and procedures adhered by ADB and Government;</li> <li>Have efficient contract management system and demonstrate it within PIU and regular monitoring of it.</li> <li>Frequent training on ADB procurement guidelines and let the EA know of ADB prior and post review procedure for procurement.</li> <li>Assist in the development of bidding documents, bid evaluation reports, addressing ADB comments to ensure compliance with ADB procurement guidelines.</li> <li>Include the responsibilities of ADB project related procurement directly into EAs officers' TORs and contracts.</li> </ul>	ADB/EA/PIU/TA team

ADB = Asian Development Bank; CRAM = Consultant Recruitment Activities Monitoring; EA = executing agency; PCMR = Procurement Capacity Monitoring Report; PIU = Project Implementation Unit; TA = technical assistance; TOR = terms of reference.

## OUTLINE TERMS OF REFERENCE

### A. Project Implementation Unit Staff

1. **Background.** The Government of Mongolia has applied a loan from the Asian Development Bank (ADB), and part of the loan will be used for the project management consulting service of the Regional Road Development and Maintenance Project. The project will include capacity development and maintenance reform, and rehabilitate sections of the following state roads in Mongolia:

Road Section	Kilometer <sup>a</sup>
Ulaanbaatar- Darkhan	193
Darkhan–Altanbulag (northern section of AH3)	118

<sup>a</sup> Asian Development Bank estimates. Actual number of kilometers of rehabilitation will depend on type of works.

2. The MRTD will be the executing agency (EA) for the project, and the Department Road Policy Implementation and Coordination Department, MRTD will be the implementing agency (IA). A project management and capacity building consulting (PMCBC) team will be recruited under the associated Technical Assistance (TA) to assist the EA and PIU and train domestic consultants on systems, procedures, and formats to provide all relevant reports.

3. International and national consultants will be recruited on an ad-hoc and as-needed basis to assist the EA in ensuring that (i) remaining design activities are carried out to the appropriate engineering and road safety standards; (ii) all activities related to project implementation are carried out in a technically, environmentally, and socially sound manner; (iii) all reporting requirements of ADB are carried out in accordance with the project administration manual (PAM); (iv) preparation and implementation of all projects are carried out in accordance with the loan documentation; and (v) MRTD is advised on all aspects of the implementation of the capacity development component.

4. The national PIU will be appointed through individual consultant selection by MRTD. A team of international and national specialists will be similarly hired for the PMCBC team under the TA to work with the PIU to implement the road rehabilitation projects, as well as road asset maintenance, road fund, and capacity development activities. While carrying out their responsibilities, the PMCBC consultants will have as an objective to maximize technology transfer to and learning by the MRTD, PIU, and related agencies and ministries and should take a proactive approach to identify areas where international best practices could be applied and to advise and train on such practices.

5. The project will finance (i) PIU (340 person-months); and (ii) design and construction supervision (international about 80 person-months, national 450 person-months; these numbers include the design and supervision for packages yet to be defined).

6. A team of national consultants will be recruited to perform the standard PIU implementation activities. They will be assisted and provided some specific training by the PMCBC consultants. The PIU will manage overall project implementation activities in a timely, efficient, and transparent manner. They will lead and coordinate project implementation, including administration, monitoring and reporting on project progress, finance, and accounting, procurement tasks, and supervision of consultants and construction contractors. In addition to the key positions identified, an office administrator, driver, and office facilities are included in the PIU. These facilities will be shared by the PMCBC consultants.

7. The PIU will ensure that all activities are carried out according to the provisions of the Loan Agreement and Mongolian legislation and regulations; coordinate and supervise administrative, technical, and communication activities necessary for the successful project implementation; provide

assistance and support to the project beneficiaries in all areas related to project implementation; responsible for proper implementation of project procedures, environmental management plans (EMP), financial management, project budgeting, procurement, contract negotiations and management, and related activities; responsible for reporting toward MRTD, Ministry of Finance (MOF), ADB, as well as other institutions involved as required; responsible for the monitoring of performance of each project component; organize project audit; and organize and carry out project monitoring and evaluation (M&E) activities.

8. The PIU consists of the following positions.

**a. Project Coordinator (national – 67 person-months)**

9. The project coordinator will be responsible for the overall project management including technical tasks and coordination of the PIU work in project implementation. He/she will be responsible for the quality of technical, operational, organizational, and administrative activities of the project needed for efficient program implementation.

10. The project coordinator will be responsible for overseeing all aspects of the PIU, ensuring consistency of the project, performing overall coordination and follow up of the project activities, providing guidance to PIU staff, coordinating project activities with other IAs and officials, and generally assisting MRTD in the successful implementation of the project. The PIU coordinator will be accountable for successful, timely, effective project implementation, and achievement of project development objectives. The PIU will consist of a minimum of eight professionals in relevant fields of experience.

11. Detailed tasks include:

- (i) Ensure and coordinate successful implementation of the project in accordance with the Financing Agreement, project documents, and all policies and procedures of the client and ADB;
- (ii) Acquire adequate facilities, equipment, and other resources to ensure the efficient operation of the PIU and fulfillment of its responsibilities;
- (iii) Manage and assist planned technical support packages within project scope;
- (iv) Ensure regular monitoring of the status of project activities (through the preparation and updating of implementation plans and schedules, disbursement projections, etc.), including preparation and transmission of comprehensive progress reports as required under the conditions of the Financing Agreement, and other reporting requirements under the project (e.g., annual audits);
- (v) Ensure contact and communication with other entities involved in the project implementation to ensure cooperation and coherency in planned and ongoing programs, as well as regular exchanges of up-to-date information regarding the project;
- (vi) Manage and coordinate project planning and budgeting including review and submission of consolidated list of planned activities and expenses to the Steering Committee on a quarterly basis;
- (vii) Prepare and update project work plans (administration, survey, training, etc.), submit such plans to the Steering Committee and ADB for go-ahead, and ensure their implementation is consistent with the provisions of the project document;
- (viii) Supervise daily activities of the PIU, evaluating performance and operating effectiveness (including ongoing staff performance evaluations and feedback), making recommendations for change as necessary;

- (ix) Oversee the selection and hiring of short- or long-term technical assistance (for example, auditors, translators and interpreters, project management support, etc.) to the PIU, including approval of the terms of reference (TOR) and shortlists of candidates and supervise the work of such contractual assistance;
- (x) With the assistance of concerned PIU staff, develop and oversee the implementation of standardized administrative and operating procedures for the Unit, including, reporting formats for financial transaction under the project (credit and counterpart fund accounts) with the financial officer; procurement and contracting tracking system with the procurement officer;
- (xi) Act as a principal representative of the project during review meetings, evaluations and discussions, hence, be responsible for preparing review and evaluation reports such as the annual project report for the consideration of the client and ADB;
- (xii) Report progress of project implementation to the Steering Committee on a regular basis and ensure timely implementation of decisions made by the Steering Committee;
- (xiii) Ensure timely preparation and submission of required reports, including technical, financial, and project implementation reports;
- (xiv) Implement internal control systems according to the rules and regulations set by the client and ADB;
- (xv) Monitor the performance indicators and evaluate the impact of the project activities; and
- (xvi) Liaise with and maintain close working relationships with all stakeholders (e.g., ministries, agencies, external partners, nongovernment organizations/civil society organizations) for successful implementation of the project.

12. **Qualifications.** The project manager should hold BS/MS in civil engineering or related field and possess relevant experience in road sector and training in project/construction management/engineering design/road maintenance/procurement/contract management (FIDIC), minimum 10 years of working experience in road construction industry and construction supervision, minimum 3 years of experience as chief engineer for contractor of construction or team leader for supervision consultant team or project manager of familiar project, minimum 2 years of relevant international project management experience, experience in managing ADB projects and experience in road construction design would be an advantage; have excellent knowledge of spoken and written English.

**b. Maintenance Engineer/Deputy Project Manager (national – 37 person-months)**

13. The project maintenance engineer will be responsible for overall construction management during project implementation. They would be responsible for the quality of technical, operational, and organizational activities of the project construction that are needed for efficient project implementation. This includes estimating, scheduling, quality control, progress reports, progress billing, design review and coordination, cost reporting, safety, and proposal preparation.

14. The consultant will work closely with the PMCBC's road asset management specialist. The consultant will carry out, but will not be limited to, the following tasks: (i) be involved in discussions with the EA on maintenance reform goals; (ii) assist PMCBC staff to identify the status of road data collection since 2013 and determine whether the data has been uploaded into the established dTIMS system; (iii) assist and monitor the design and construction supervision in the preparation of designs for project works; (iv) monitor targets for EA's performance indicators; (v) define the location, methodology, and studies needed to prepare preliminary engineering designs (PEDs) for the road maintenance program and subprojects for output 2 packages that are yet to be defined, (vi) support the PMCBC staff in developing measures to prevent vehicle overloading, (vii) work with PMCBC team

to ensure timely design approvals are given by expertise panels; and (vii) complete other tasks that will arise during project implementation.

15. **Qualifications.** The project maintenance engineer should be a pavements/materials engineer holding a BS/MS in civil engineering and possess relevant experience in road sector and training in road maintenance/construction/project management/design, with a high level of proficiency in road maintenance planning systems (preferably dTIMS, HDM-4, or equivalent) and at least 10 years of experience in road maintenance planning/implementation or road construction, minimum 3 years of experience as chief engineer for contractor of construction or team leader for supervision consultant team. Ideally, they should have good knowledge of spoken and written English.

**c. Material Engineer (national – 33 person-months)**

16. The material engineer will be responsible for the project management of overall construction materials in project implementation. They would be responsible for (i) overseeing the quality of construction materials testing and special inspection and independent report preparation to EA for the project proposed technology transfer for Mongolia; (ii) coordinating or directing design and supervision consultants and contractors on materials testing, evaluating, selecting, and applying standard engineering methods, techniques, and procedures; (iii) supporting the development of a performance specification for a construction contract using innovative materials/construction techniques; (iv) assist in the determination and establishment of borrow/quarry sites for the project maintenance works, ensuring that all necessary approvals and EMP requirements are being met; and (v) complete other tasks that will arise during project implementation. They will work with the national and international maintenance engineers as necessary.

17. **Qualifications.** The material engineer should hold BS/MS in material/engineering/civil engineering and possess relevant experience in road construction industry and training in road construction material testing, minimum 8 years of working experience in road construction material field, minimum 3 years of relevant international project management experience would be an advantage; have good knowledge of spoken and written English.

**d. Environment Safeguard Officer (national – 20 person-months)**

18. The environment safeguard officer will be responsible for the project-specific EMP implementation during the entire project implementation. They would be responsible for overseeing contractors and design and construction supervision consulting (DCSC) firm(s) and their performance in EMP and the construction-site specific EMP (CEMPs) implementation. The environment safeguard officer will be responsible for GRM implementation and will ensure environmental monitoring and reporting requirements to be met as agreed in PAM and EMP. She/he will work closely with loan implementation environmental consultants under the DCSC and take the following and other relevant tasks.

- (i) Closely communicate with PIU, PMCBC, and other consultants relevant to the project and support the EA and PIU to meet full environmental compliance of the project throughout the project implementation;
- (ii) Assist the EA, PIU, and PMCBC in preparing EMP provisions for the bidding document and contract;
- (iii) Assist the EA, PIU, and PMCBC in engagement of an independent environment monitoring organization licensed by the Ministry of Environment, Green Development, and Tourism (MEGDT);
- (iv) Provide guidance to the selected environmental monitoring organization in conducting environmental impact monitoring according to the environmental monitoring plan (EMoP) in the EMP and coordinate with this organization on all monitoring activities;



- review external environment monitoring reports (both construction and operation periods) prepared by the organization;
- (v) Closely communicate with environmental engineer at the construction supervision company(ies) and environmental monitoring stations/firm to ensure EMP and EMoP to be duly implemented;
- (vi) Conduct regular site visits and assess the EMP implementation. If any noncompliance is found, report your concern and propose a corrective action to contractors, a construction supervision company, and the PIU; and record noncompliance and implementation of corrective actions in EMRs;
- (vii) During the regular site visits, conduct public survey to affected communities and inform GRM and ensure any additional concern to be heard and be appropriately dealt with;
- (viii) Develop an EMP training program and provide a series of training to staff from the EA, PIU, PMCBC, contractors, and construction supervision company(ies) on environmental safeguard requirements under the Mongolian environmental laws and regulations, and ADB's Safeguard Policy Statement (2009), including EMP, monitoring and reporting requirements of the initial environmental examination (IEE) and EMP, GRM, preparation and implementation of construction site EMP, and other international best practices on environmental, health, and safety management;
- (ix) Prepare annual environmental monitoring reports with quality and submit to the EA through PIU and ADB, incorporating all the comments from PIU, EA, and ADB; and

If any change in the project scope, and engineering design change occurred during the project implementation, assess the need of IEE, EMP, EMoP revision; consult with PIU, EA, and ADB for revision and/or addition; and prepare and submit revised documents accordingly.

19. **Qualifications.** The environment safeguard officer should hold BS/MS in environmental science/engineering and possess relevant experience in environmental management of road construction and other similar industries. She/he shall have minimum 7 years of working experience in environmental management and environmental impact assessment field, minimum 3 years of relevant international project management experience would be an advantage; must have good knowledge of spoken and written English.

**e. Social Development Specialist (national – 15 person-months)**

20. Overall project implementation support on resettlement, social development, and gender, including:

- (i) review, advise, and support implementation of social development and gender action plan (SDGAP) in consultation with the local communities and relevant stakeholders
  - (a) Project-related employment opportunities to local people;
  - (b) Consultation and participation;
  - (c) Livelihood support activities;
  - (d) Assist the PIU in planning and managing the HIV/AIDS prevention campaign and monitor that the contractors are providing training to workers on health and safety awareness including HIV/AIDS prevention;
  - (e) develop modalities for SDGAP implementation including developing strategy for liaison and coordination between various line agencies, identification and availability of budgetary sources, and coordinating with various agencies and the EA;
- (ii) assisting PIU in grievance resolution and regular monitoring of any temporary and/or actual resettlement impacts during construction if any;
- (iii) prepare sections for the project progress report to be submitted to ADB including semiannual report for SDGAP implementation;

- (iv) review and screen subproject proposals for future subprojects including preparation of relevant documentation for involuntary resettlement/indigenous peoples safeguards if triggered including social development and gender; and
- (v) assist the PIU to develop a road safety awareness program for the local communities, coordinate and direct the supervision consultant and contractor to develop road safety signage (preferably symbolic signage).

21. Upon identification of another road rehabilitation and maintenance component for unallocated amount under output 2:

- (i) For every subproject, closely coordinate with the technical/engineering team and conduct site visits and due diligence to screen land acquisition and resettlement (LAR) impacts and other social issues if any;
- (ii) Conduct periodic public consultations with affected people to inform about the project implementation progress including GRM and coordinate with relevant stakeholder meetings with the local government officials dealing with land-related issues;
- (iii) Conduct socioeconomic survey including inventory of losses of the affected communities if any;
- (iv) Prepare resettlement plan (RP) guided by the resettlement framework and submit to ADB for approval prior to award of contracts;
- (v) If no LAR impacts, prepare and submit to ADB due diligence reports with supporting photo documentation including land records that there is no LAR impact to confirm category C;
- (vi) Conduct periodic review and monitoring of subproject implementation including adequate budget support from the government;
- (vii) Report any compliance actions in the project progress reports and semiannual reports and, if identified, prepare corrective actions in consultation with the PMCBC specialist;
- (viii) Prepare SDGAP for output 2 in consultation with local communities and relevant stakeholders to be submitted to ADB for approval prior to contract awards; and
- (ix) Support SDGAP implementation.

22. The following reports shall be submitted by consultant/specialist to the EA and ADB.

- (i) Conduct of baseline survey and establishing baseline indicators for SDGAP;
- (ii) Monthly report on planned activities and implementation plan within 1 month after mobilization;
- (iii) Special reports on workshops and seminars, as appropriate, within 1 week of event, if any;
- (iv) Summary of progress with implementation of social safeguards (if any for the unidentified subprojects under output 2) and SDGAP activities for output 1 (and output 2 - when prepared), and quarterly project progress reports;
- (v) Detailed semiannual SDGAP implementation and monitoring reports for output 1 (and output 2 - when prepared), for EA and ADB, as required with conclusions and recommendations; and
- (vi) Project completion report with conclusions and recommendations. The report shall include all appendixes and all relevant data.

23. **Qualifications.** The candidate shall have a degree in social sciences/anthropology/sociology with 8 years of experience of working in the resettlement and other social development sector. Further, the candidate is fluent in English and experienced in preparing safeguard requirements and social-related and HIV/AIDS documents as mentioned in the TOR in English to a high standard to meet EA and ADB's requirement.

**f. Project Accountant/Financial Management Specialist (national – 67 person-months)**

24. The position is fully responsible for the project billing process, including responding to EA, MOF, ADB inquiries, in accordance with the financial covenants of the Loan Agreement, ADB Loan Disbursement Handbook 2015, and applied accounting standards and billing policy. She/he would be responsible for planning and managing disbursement activities including monitoring of the project fund utilization and timely disbursement of funds, preparation of withdrawal applications and related financial documents for ADB's review, processing of payments to consultants and contractors, financial records keeping, and preparation of regular financial reports, arranging documents for annual audits. Main tasks include the (i) preparation of quarterly and annual budgets; (ii) preparation of quarterly and annual financial reports; (iii) tracking disbursement progress of the PIU; (iv) completing cash management and disbursements; (v) maintaining a fixed asset system; (vi) calculating and paying personal income tax for contracted FA PIU staff; and (vii) preparing financial and disbursement documents or other financial reports. Detailed tasks include:

- (i) establishing an efficient and effective financial management system for the project implementation in accordance with ADB policy and procedural requirements and implementing such financial management system and develop the project financial management manual;
- (ii) preparing quarterly and annual budgets to assist PIU to plan and program their activities;
- (iii) preparing quarterly and annual financial reports;
- (iv) tracking disbursement progress of the PIU;
- (v) completing cash management and disbursements;
- (vi) maintaining a fixed asset system;
- (vii) calculating and paying personal income tax for contracted PIU staff;
- (viii) preparing financial and disbursement documents or other financial reports;
- (ix) assisting in establishing appropriate project accounting procedure for the PIU, verify if internal control system is employed, check current internal audit, external or government audit, and recommend any changes as appropriate;
- (x) assessing availability of counterpart funding, operation and maintenance budgets, and subsidies as appropriated; and prepare project financial information, including cost estimates and financing plan;
- (xi) identifying areas for improvement and training needed with respect to the quality of financial statements, disclosure, and notes to the financial statements, and develop templates for the annual financial statements;
- (xii) evaluating the year-by-year compliance with ADB loan covenants dealing with counterpart funds, financial management of the EA and assist with reporting as required;
- (xiii) conducting real-time monitoring and adjustment on status of various components and loan categories, and changes in demands for ADB loan proceeds and domestic counterpart fund under each of the contracts; and
- (xiv) conducting training to PIU/PMCBC in accordance to ADB guidelines and procedures on financial management requirements and reporting systems.

25. **Qualifications.** The project accountant should be a graduate or hold a degree in accounting, business or financial management with detailed knowledge of project contracts and change order documents and minimum 5 years of experience in accounting; ideally have good knowledge of spoken and written English.

**g. Procurement Specialist (national – 29 person-months)**

26. The position is responsible for planning; coordinating all procurement activities; and providing high level assistance, technical guidance to ensure compliance with ADB's procurement (goods, works, and consulting services) policies and procedures for civil works, construction supervision, and other. The specialist will receive and capacity building and training throughout the project both from the ADB and the PMCBC. They would be responsible for:

- (i) planning, coordinating and providing all procurement activities including establishment of bid evaluation committees;
- (ii) working with and assisting the State Property Committee, procurement agency as necessary to ensure all procurement matters are handle as per government regulation, in a timely manner and all ADB requirements are also met;
- (iii) updating the draft procurement plan and implementation schedule on a quarterly basis through the project implementation;
- (iv) ensuring the EA, PMCBC, and ADB receive regular updates/reports on implementation and procurement status;
- (v) reviewing and finalizing bid documents for design and supervision consultant, Ulaanbaatar-Darkhan and Darkhan-Altanbulag civil works contracts;
- (vi) ensuring all necessary approvals are in place in a timely manner;
- (vii) advertising and following through of all invitation for bids, bidders' inquiries, bid evaluation, preparation of bid evaluation minutes and reports,
- (viii) implementing and monitoring of the performance-based maintenance contract pilot proposed for Ulaanbaatar-Darkhan;
- (ix) preparing contract negotiations with selected bidders and submissions for ADB's review;
- (x) assisting PMCBC staff in preparation of selection, bid documents, and approvals for the Darkhan-Altanbulag contract, and the remaining contracts yet to be determine for output 2;
- (xi) for the later contracts: advertising and following through of all invitation for bids, bidders' inquiries, bid evaluation, preparation of bid evaluation minutes and reports, and
- (xii) other procurement activities as they arise throughout project implementation.

27. **Qualifications.** The procurement specialist should hold BS/MS in law or other disciplines and at least 7 years of experience in procuring goods, works, and services in projects funded by international financial institutions, preferably ADB, A3 National Certificate of Public Procurement, written and oral English proficiency.

**h. Translator/Office Administrator (national – 65 person-months)**

28. As a part of the PIU, the translator/secretary will work under the direct supervision of the project coordinator, be responsible for day-to-day office secretarial tasks at the PIU and translation of relevant documents and interpretation during meetings. The documents are typically on the following topics: financial, technical (road engineering), environment, gender, and capacity building. This position will manage the flow of information sharing between national and international stakeholders on the project.

29. **Qualifications.** Candidates must have a degree in a relevant field and at least 5 years of experience of performing written translations of policy and program related documents and interpretations during business meetings, workshops, preferably, in the areas of engineering,

environmental management, and social development. In addition, they should have prior experience of secretarial duties and office management.

## **B. Design and Construction Supervision Consulting Services (DCSC)**

30. **Background.** The Government of Mongolia intends to apply for a loan from ADB to finance the Regional Road Development and Maintenance Project. The EA will be MRTD. A PIU will be established by MRTD and report to the EA, and will act as the IA for the EA.

31. The project comprises the following components:

- (i) **Output 1: Road asset management capacity improved.** This output will strengthen sustainable road maintenance practices and build capacity for implementation of maintenance projects prepared and procured during the project. The capacity building will include (i) reestablishing and providing training on the RAM system to improve maintenance planning, implementation, and prioritization;<sup>1</sup> (ii) designing improvements in road funding to ensure sustainability of maintenance activities, including measures to prevent vehicle overloading; and (iii) supporting pilot performance-based maintenance. This output will be delivered partly through the associated TA and partly undertaken together with output 2.
- (ii) **Output 2: Road condition improved.** This output will preserve and improve an important regional road section which links the PRC and the Russian Federation through Mongolia's capital and comprises part of CAREC road corridor 4b. The project will improve 311 km existing national highway sections comprising Ulaanbaatar–Darkhan (193 km) and Darkhan–Altanbulag (118 km). The improvement works will include: (i) pavement treatment and (ii) widening of carriageway and shoulder within the existing right of way (ROW).
- (iii) **Output 3: Road safety improved.** This output will provide capacity development in road safety policies and the implementation of safety features in the road condition improvement works undertaken together with output 2. The safety features will include improvements in road markings, barriers, and guide posts. Climbing lanes will be constructed within the ROW at traffic accident blackspots, where overtaking of slow moving vehicles often causes fatal head-on-head collisions. A full road safety audit will be conducted on detailed designs, as well as a post construction audit.<sup>2</sup>

32. Procurement of the works between Ulaanbaatar and Altanbulag is in progress and it is expected a contract will be signed and a contractor mobilized in time for the 2019 construction season. This contract is being bid on the basis of a preliminary design of the proposed periodic maintenance works and road safety improvements. This design is based on a visual drive over inspection of the road and is to be finalized by the DSC prior to and during construction.

33. Procurement of the works between Darkhan and Altanbulag is expected to commence in Q3 2019 in time to mobilize contractors for the 2020 construction season. Preparation of the detailed design of the proposed periodic maintenance works and road safety improvements is to be finalized by the DSC based on inspection and necessary testing of the site, and experience gained and lessons learned during the design and construction of the Ulaanbaatar–Darkhan road for inclusion in the bid documents to be prepared by the PIU.

<sup>1</sup> An assessment will be made of the use of equipment and planning tools provided in 2010 under TA7297-MON: Road Database Development Using Geographic Information System.

<sup>2</sup> Use of ongoing or planned TA experts will be considered for the safety auditor.

34. Procurement of the periodic maintenance works described in 32 (iii) above is expected to commence in Q3 2019 in time to mobilize contractors for the 2020 construction season.

35. The contracts for the road between Ulaanbaatar– Darkhan and Darkhan–Altanbulag will be based on the Conditions of Contract for Construction for Building and Engineering Works Designed by the Employer, Multilateral Development Bank Harmonized Edition, prepared by the Fédération Internationale des Ingénieurs-Conseil (FIDIC 2010 MDB version).

36. The contract(s) for the maintenance works described in 32 (iii) above will either be under the FIDIC 2010 MDB contract or the Conditions of Contract of the World Bank's Standard Bidding Documents for Procurement of Works, Smaller Contracts, December 2012. The form of contract and method of procurement (international or national competitive bidding) for these works will depend on the estimated contract value(s).

## **1. Objective**

37. These Terms of Reference (TOR) describe design and construction supervision consulting services associated with components 2 (i) and 2 (ii) above; i.e. the Ulaanbaatar–Darkhan and Darkhan–Altanbulag roads.

38. In addition, and subject to acceptable performance by the Consultants of the services described above, it is intended that once the scope of the periodic maintenance works in 32 (iii) have been determined, a contract variation will be negotiated and agreed with the DSC for the design and construction supervision consulting services of these works.

39. The overall objective of these TOR is to:

- (i) provide advisory services for design, construction, contract administration and construction supervision of periodic maintenance and road safety improvements,
- (ii) ensure that all works are carried out in full compliance with the engineering design, technical specifications and other contract documents,
- (iii) encourage the development of effective road maintenance practices and procedures by working closely with the civil works contractors, PIU and MRTD in carrying out routine maintenance works on the Ulaanbaatar–Darkhan and Darkhan–Altanbulag roads,
- (iv) promote technology transfer either through associations between international and domestic firms or by employment of local staff, and
- (v) promote technology transfer and the introduction of modern technologies and contract administration practices within the PIU and MRTD.

## **2. Scope of Consulting Services**

40. Duties and responsibilities of the consultant:

- (i) Prepare detailed design of maintenance works and road safety improvements for the Ulaanbaatar–Darkhan and Darkhan–Altanbulag road sections based on inspection and necessary testing of the site for inclusion in bid documents to be prepared by the PIU.
- (ii) Review and comment on the bid documents including the location of proposed maintenance treatments (asphaltic concrete overlay, rehabilitation) and safety improvements (slow vehicle lanes, localized improvements to safety black spots, guardrails, road marking and road signs) as detailed on the Drawings and in the

- Specification, and prepare detailed design in accordance with the specified standards/parameters and best international practice as described above.
- (iii) As Engineer, the DSC will administer the construction contract(s) (the Contract) between the civil works contractors (the Contractor) and MRTD (the Employer) and ensure that the Works are constructed in accordance with the provisions of the Contract. The consultant will make all engineering decisions required for the successful and timely implementation of the Contract and have all those powers which are defined as being the Engineer's. The Engineer will be required to nominate an Engineers' Representative who will be resident full-time on the project.
  - (iv) Administer and supervise routine maintenance compliance and provide advice and training to the civil works contractors, PIU and MRTD. The contractors are responsible for the identification and rectification of faults to maintain the roads in full compliance with the performance standards. While the Consultant's primary role is to confirm that compliance has (or has not) occurred, it is expected the Consultant will adopt a proactive approach to encouraging best practice in the management and repair of defects on the roads.
  - (v) If confirmed by the PIU (refer paragraph 39 above) prepare detailed design of the maintenance works described in 32 (iii) above and supervise and administer the contract(s) for these works.
  - (vi) **Road safety improvements.** The project-proposed road safety improvements are at a higher standard than Mongolian standards. Provide road safety training for the EA and design engineers;
    - a) Review the status of road safety design practices in Mongolia, and prepare specifications for improvements as necessary;
    - b) Identify a range of technical solutions for installation of signs and markings, safety measures for bends, long steep grades and junctions, roadside safety treatment and traffic calming;
    - c) review road safety related routine maintenance practices e.g. around vegetation/tree control on shoulders; time to repair safety barriers, etc.;
    - d) Review the draft CAREC guidelines and suggest inclusions to incorporate road safety improvements specifically for road maintenance projects;
    - e) Assist design supervision consultants to specify road safety specifications for project maintenance activities;
    - f) Assist with the approval process to revise road safety standards, especially for Asian highways and other international roads in Mongolia;
    - g) Provide follow-up assistance and training in blackspot analysis and safety treatment analysis;
    - h) Assist MRTD to carry out road safety audits of the project roads; and
    - i) Carry out road safety audits at construction and post-completion stages for the two highways and on a sample basis for rural roads, through coordination with consultants that the MRTD will assign from ongoing or planned TA on road safety, and provide engineering recommendations as appropriate.

41. **Preparation of Detailed Designs for Ulaanbaatar–Darkhan and Darkhan–Altanbulag Roads.** The scope of works described above and the information provided in the bid documents for the Ulaanbaatar–Darkhan road (Section 6. Employer's Requirements and Section 4. Bill of Quantities) are based on a visual drive over inspection of the road. A detailed inspection was not carried out and no machine-based data (FWD, roughness, condition, etc.) was available. The scope of work is therefore considered preliminary and is to be finalized by the DSC.

42. The preparation of detailed designs shall include but not be limited to the following tasks:

- (i) Prepare TOR for geotechnical investigation and testing of existing pavement; obtain and evaluate three quotations; prepare evaluation report and request PIU and ADB approval to utilize provisional sum; instruct supplier and supervise investigation.
- (ii) Prepare detailed design of maintenance works including standard details of treatments, schedule of locations, and estimated quantities and cost.
- (iii) Prepare Terms of Reference for topographic survey and geotechnical investigation and testing of sites for proposed slow vehicle lanes; obtain and evaluate three quotations; prepare evaluation report and request PIU and ADB approval to utilize Provisional Sum; instruct supplier and supervise survey and investigation.
- (iv) Model slow vehicle lanes using appropriate software to confirm locations and prepare detailed designs including vertical and horizontal alignment, plan, cross sections, standard details, and estimated quantities and cost.
- (v) Prepare schedules based on standard detail drawings showing location of road signs, road marking, edge marker posts and guardrails, including estimated quantities and cost.
- (vi) Submit final designs of periodic maintenance treatments and safety improvements (slow vehicle lanes, road marking, road signs, etc.), including standards, calculations, drawings, specifications, quantities and cost estimates, to the Employer for review and approval.
- (vii) As Engineer for the Ulaanbaatar–Darkhan contract, issue approved final designs to the contractor for construction.

43. The detailed designs for Ulaanbaatar–Darkhan and Darkhan–Altanbulag roads are to be carried out in accordance with the following standards:

Description	Standard
Geometric Design	Mongolian Highway Design Standard, ZZBNbD 22-004-2016, Section 2
Traffic Loading	Mongolian Highway Design Standard, ZZBNbD 22-004-2016, Section 13
Pavement Design	Road Design Standard for Flexible Pavements, RS-218-046-01
Road Maintenance	Mongolian Road Maintenance Regulations, AD-80-201-15; CCM13-03-00 Methodology and technology for the maintenance of road and road structure; UBB80-201-00 Basic Normative of Road and Bridge Maintenance
Safety Improvements	Mongolian Highway Design Standard, ZZBNbD 22-004-2016, Section 7 Road signs, road marking and edge marker posts – MNS4597:2003; MNS4912:2000; MNS4759:2003; MNS 4596:2014 Guardrail – MNS AASHTO M 180:2004; MNS6517:2015; MNS5614:2006

44. The detailed designs are to be based on the following criteria:

- (i) Road Classification I-G;
- (ii) Design life of 15 years; and
- (iii) Traffic loading A1 (Table 1, Row 1.1).

45. **Contract administration and construction supervision.** The DSC, as the Engineer to the works contracts, shall be responsible for carrying out all the tasks defined in the FIDIC Conditions of Contract and have all those powers which are defined as being the Engineer's, except for the following<sup>3</sup> which, in addition to those under Clause 3.1, will be retained and exercised by the Employer, generally on the advice of the Engineer.

- (i) Subcontracting (§4.4)
- (ii) Order to Commence Work (§8.1)

<sup>3</sup> Clause numbers correspond to 'FIDIC Conditions of Contract for Construction MDB Harmonized Edition June 2010.



- |       |                                       |         |
|-------|---------------------------------------|---------|
| (iii) | Extension of Time                     | (§8.4)  |
| (iv)  | Suspension of Work                    | (§8.8)  |
| (v)   | Taking Over of the Works and Sections | (§10.1) |

46. In addition, the Engineer should obtain the specific approval of the Employer when delegating duties and authorities to the Engineer's Representative under Clause 3.2 or revoking such delegation.

47. The responsibilities of the Engineer shall include, but not be limited to, the following tasks:

- (i) appoint various members of the Engineer's construction supervision team as Engineer's Assistants (Resident Engineer, Materials Engineer, etc.) and notify the Contractor and Employer;
- (ii) approve the Contractor's Representative;
- (iii) verify whether the Performance Security complies with the form provide in the Contract, whether it is in the correct amount and currencies, and notify the Employer accordingly;
- (iv) advise the Employer whether to accept the Performance Security;
- (v) if the Contractor does not submit the Performance Security on time, notify and advise the Employer of the appropriate contractual remedies;
- (vi) request the Contractor 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 under the Contract, is in the amount and currencies stated in the Particular Conditions of the Contract and that the guarantee is valid until the entire advance payment is recovered from the Contractor's certificates;
- (viii) interpret the specific provisions of the Contract related to the Employer's obligation to give possession of the Site, and the Contractor's Program, and assess the contractual consequences of any specific land acquisition issue and advise the Employer on the appropriate mitigation measures;
- (ix) obtain the Parties' confirmation that all conditions in Sub-Clause 8.1 of the Conditions of Contract are fulfilled;
- (x) issue instruction to the Contractor to commence the Works and record the Parties agreement per Sub-Clause 8.1 of the Conditions of Contract;
- (xi) verify whether the form and substance of the evidence of the Contractor's insurances is satisfactory, whether insurance premiums have been paid and the required insurances are effective on the dates required by the Contract;
- (xii) verify that the terms of the Contractor's 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;
  - d. whether and which subcontractors are covered by the insurances, and whether additional insurances will be required if the Contractor engages new subcontractors.
- (xiii) monitor whether the Contractor maintains adequate insurance during performance of the Contract, particularly if the Contractor provides insurances for a fixed period which is shorter than the period required under the Contract;
- (xiv) advise the Employer on the appropriate action and contractual remedies in case that the Contractor does not perform its insurance obligations in accordance with Contract;

- (xv) without relieving the Contractor of their obligations under the Contract, review and approve the traffic management and safety plans, and ensure compliance such that the Works are always carried out in a safe and secure manner and damage or injury to persons or property is avoided;
- (xvi) obtain bench marks and other information from the relevant authority as required for commencement of construction activities;
- (xvii) ensure that the Contractor has all necessary data for setting out the Works and check the Contractor's setting out including staking the right-of-way limits, centerline, and grade and confirm permanent monuments in the construction area, as required;
- (xviii) assess minimum construction equipment, plant and machinery requirements, by type and specification, and monitor, keep and regularly update a list of the Contractor's equipment, plant and machinery to monitor the Contractor's mobilization;
- (xix) inspect and evaluate the Contractor's establishments including laboratory facilities to ensure compliance with the terms and conditions of the Contract;
- (xx) assist the parties establish a Dispute Board (DB), provide all necessary information to DB members and attempt to facilitate amicable settlement of the dispute between the Employer and the Contractor;
- (xxi) establish and maintain an effective documents management system in the Engineer's office, which provides for separate filing of incoming and outgoing correspondence and documents, as well as the filing by subject matter;
- (xxii) ensure receipt of, and maintain as permanent records, all warranties required under terms and conditions of the Contract for materials including their source and equipment accepted and incorporated in the Works;
- (xxiii) prepare standard Daily Diary forms and ensure that all supervision staff maintain daily diaries of Contractor's and their own activities;
- (xxiv) keep and maintain daily records of labor, equipment and weather conditions on the Site along with records of activity, progress and other events happening on the Site and having relevance to the Works;
- (xxv) advise PIU on need for effective liaison with local authorities, police, landowners, utility owners, complainants, the public and other organizations affected by the Works to minimize or avoid unnecessary delays or disputes;
- (xxvi) ensure that the Contractor provides a safe workplace for their workforce, supervisory personnel and for members of the public requiring access through the sites in full conformity with relevant health and safety regulations;
- (xxvii) ensure that the Contractor complies fully with contractual obligations relating to care of the environment (both specified and legislated) and provide all reports and obtain all permits and permissions required in relation to spoil areas, borrow areas quarries and the like;
- (xxviii) ensure that all land and all rights-of-way required for the Contract are made available to the Contractor in accordance with the schedule agreed under the Contract and all land acquisition and resettlement activities, if any, are implemented in compliance with (a) all applicable laws and regulations of the Borrower relating to land acquisition and involuntary resettlement; (b) the Involuntary Resettlement Safeguards; and (c) all measures and requirements set forth in the LARP, and any corrective or preventative actions plan set forth in a Safeguards Monitoring Report;
- (xxix) assist the PIU in notifying the Contractor on LAR and non-LAR sections and ensuring that Works are conducted only in LAR-free areas and areas where LARP implementation has been completed;
- (xxx) submit semi-annual reports during construction and annual reports thereafter with separate environmental and social Safeguards Monitoring Reports to ADB, and disclose relevant information from such reports to affected people promptly upon submission;

- (xxxi) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP, or the LARP, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan;
- (xxxii) report any actual or potential breach of compliance with the measures and requirements set forth in the EMP or the LARP promptly after becoming aware of the breach;
- (xxxiii) provide PIU with a written notice of any unanticipated environmental, or resettlement or indigenous peoples risks or impacts that arise during construction, implementation or operation of the Contracts that were not considered in the IEE, the EMP, or the LARP;
- (xxxiv) Carry out the following duties related to environmental management with particular reference to the technical requirements of sound environmental standards on the basis of the Environmental Assessment and Review Framework (EARF), the IEEs, and the EMPs during construction: (i) review and endorse site specific EMPs for the projects sections, prepared by the Contractor; (ii) ensure that all the environmental mitigation measures required to be implemented are incorporated in the Contract; (iii) ensure that the Contractor complies with the measures and requirements relevant to the Contractor set forth in each IEE and EMP, and any corrective or preventative actions set out in Environment Monitoring Reports; (iv) conduct environmental monitoring and ensure that the day-to-day construction activities are carried out in an environmentally sound and sustainable manner; (v) prepare and submit semi-annual environmental monitoring reports on the implementation of the EMP to PIU within 14 days after a completion of the monitoring period; (vi) Prepare additional environmental impact assessments, if required, compliant with ADB SPS, 2009 and ensure that all required mitigation measures are identified and acceptable; (vii) in the event of unanticipated environmental and/or social risks and impacts, that were not considered in the applicable IEE, or EMP, promptly inform PIU and ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; (viii) report to ADB/PIU of any actual or potential breach of compliance with the measures and requirements set forth in the applicable EMP promptly after becoming aware of the breach;
- (xxxv) with respect to the prevention of HIV/AIDs and Human Trafficking, monitor the Contractor's compliance and carry out required actions as provided in the Contract, such as awareness and education of laborers and workers;
- (xxxvi) ensure that the Contractor does not involve child labor for the execution of the Contract in accordance with the provisions of the Contract;
- (xxxvii) without relieving the Contractor of their obligations under the Contract, check and approve the Contractors' working drawings, method statements and temporary works proposals;
- (xxxviii) review the Contractor's Program and notify the Contractor if the Program does not comply with the Contract;
- (xxxix) monitor progress against the Program and the cash flow estimate and request revisions, if required;
- (xl) report in the Engineer's monthly report the progress of the work against the Contractor's Program and the cash flow estimate;
- (xli) verify whether the progress charts in the Contractor's monthly progress report reflect the actual progress and correspond to the latest revision of the Program and the cash flow estimate, and instruct the Contractor to correct the report, if required;
- (xlii) assess objectively the Contractor's claims and give professional and objective advice to the Employer, consult both parties before determining an extension of time;

- (xlili) determine Contractor's claims based on the Program, the impact of the delay(s) on the critical path and the particulars submitted by the Contractor;
- (xliv) if required, determine the Contractor's entitlements to time extensions based on the Contractor's Program;
- (xlv) determine the Employer's entitlement to Delay Damages based on the Program and advise the Employer of the relevant contractual remedies if the Contractor's progress is behind schedule;
- (xlvi) conduct regular weekly site meetings and monthly progress review meetings, record and distribute the minutes;
- (xlvii) perform quantity take-offs from drawings to verify quantities;
- (xlviii) issue regular notices to the Contractor of intended field measurements, measure the Works, compute the quantities for payment, and determine the amounts due to the Contractor within the period specified in the Contract;
- (xlix) carry out any subsequent design changes, and expeditiously issue supplementary drawings, site instructions, variation orders and daywork orders to avoid delay to the Works and to ensure that the Works are executed in accordance with Contract;
- (l) establish and maintain throughout the Contract a structured system of measurement records, supporting documents and calculations for the payment of all Bill of Quantities (BoQ) items, that is transparent for auditing purposes;
- (li) provide all necessary assistance to the Employer and external auditors in conducting audits of the measurement records, supporting documents and calculations for the payment of all BoQ items;
- (lii) 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;
- (liii) establish with the Contractor a standard format for the Contractor's Statement and the Interim Payment Certificates (IPC);
- (liv) issue the IPC to PIU for payment to the Contractor in accordance with Clause 14 of the Conditions of Contract, having regard to any contractual provisions for advance payment, variation of price, and exchange rate fluctuation etc.;
- (lv) certify the completion of the Activities / Works or parts thereof and process final payments to the Contractor;
- (lvi) prepare and maintain an Estimate of Cost of Works to Completion, regularly update the Estimates after each Variation instruction or a Variation Order issue and after each IPC, and present the latest Estimate in the Consultant's Monthly Progress Reports;
- (lvii) initiate and process variations promptly, when necessary for the construction of the Works;
- (lviii) request the Contractor's technical and cost proposal, as required, consult both parties in all matters in connection to variation work;
- (lix) value variations, obtain the Employer's approval of any variation, 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;
- (lx) discharge fully the Engineer's obligations with respect to approval of materials and workmanship, approval and auditing of the Contractor's Quality Assurance System and the QA Personnel and the compliance testing by the Engineer;
- (lxi) inspect quarries and borrow pits, and crushing plants, and order tests of materials and ensure adherence to the Specification, and approve the sources of materials;
- (lxii) without relieving the Contractor of their obligations under the Contract, monitor the Contractor's laboratory testing, as applicable evaluate the Portland cement concrete and bituminous mixture designs prepared by the Contractors, and recommend improvements (if any) to ensure the desired performance, and accord approval thereof;

- (lxiii) carry out independent testing in the field and/or the Contractor's laboratory and approve or disapprove and certify the Works that conform with the specifications and maintain permanent records of results of all the tests made;
- (lxiv) give notice to Contractor of any defects and deficiencies, and issue instructions for the removal and substitution of the improper works, where provided under the contract;
- (lxv) if required, and following consultation with the Employer, order suspension of the work(s) and/or recommend to PIU other recourse available under the Contract;
- (lxvi) when the Works are completed in accordance with the Contract, issue a Taking-Over Certificate to the Contractor;
- (lxvii) undertake an inspection of the Works at the completion of the respective sections, and certify the Contractor's final accounts;
- (lxviii) 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;
- (lxix) administer and supervise routine maintenance works, determining the level of compliance with the performance standards and associated non-performance payment deductions; and provide advice and training to the Contractor, PIU and MRTD;
- (lxx) work with Contractor to prepare as-built drawings and as-built data for the completed works in a format approved by the Employer; and
- (lxxi) provide any other specialist services requested by PIU under conditions to be mutually agreed.

### **3. Duration of the Assignment**

48. Consulting services are required for a total of 60 months comprising: (i) 24 calendar months for construction supervision and 36 calendar months during the extended 3 year defects notification period (DNP) for the Ulaanbaatar–Darkhan road; and (ii) 24 calendar months for construction supervision and 12 calendar months during the DNP for the Darkhan–Altanbulag road. As noted in paragraph 33 and 34, construction works for the two contracts are to run consecutively.

49. The DCSC will be fielded 9 months per year, totaling 36 months throughout the 2-year construction periods for both the Ulaanbaatar–Darkhan and Darkhan–Altanbulag roads. Concurrently with the supervision of the civil works, the consultancy services will also cover the supervision of the routine maintenance component of the works; 60 months (5 years) for the Ulaanbaatar–Darkhan road and 36 months (3 years) for the Darkhan–Altanbulag road. The consultant will require a permanent part-time presence to monitor contractors' performance on the routine maintenance component of the works throughout the respective contract periods. The consultancy services contract is expected to commence in 2019.

### **4. Team Composition, Estimated Inputs, and Qualification Requirements for Key Experts**

50. The Consultant is expected to be an association of international and national firms with the appropriate capabilities and experience to execute the services. The designated lead firm will be solely responsible for the proper performance of the consulting services and will be appointed as the Engineer for the civil works Contracts. The firms (international and national) will have extensive experience for each part of the services, and will nominate personnel with appropriate in-depth skills and experience. It is anticipated that the Consultant's team will be essentially as set out in para. 101 of this TOR, although, in preparing their proposal the consultant may propose alternative arrangements which, in their opinion, will provide services of an equivalent quality. The final staffing

will be adjusted to suit the overall project program, the methods adopted by the Contractors and the actual procurement and implementation schedules.

51. The overall project program as set out in paragraphs 30 and 31 means that construction works on the Ulaanbaatar–Darkhan road will be completed in the 2019 construction season, the year before works commence on the Darkhan–Altanbulag road. The DSC’s construction supervision team will therefore relocate to the Darkhan–Altanbulag road following completion of the construction works on the Ulaanbaatar–Darkhan road. After award of the contract for the Darkhan–Altanbulag road, the DSC’s road maintenance team (Road Maintenance Specialist and Senior Road Maintenance Engineer) will be responsible for supervising routine maintenance works for both contracts.

52. It is estimated that about 55 person-months of international consultants’ services and about 325 person months of national consultants’ services will be required for both contracts to (i) provide advisory services in road and pavement design, contract administration and construction supervision, (ii) administer and supervise routine maintenance works and provide advice and training to the Contractors, PIU and MRTD (iii) prepare or help prepare reports to be submitted to ADB in accordance with the PAM.

53. The consultant team will comprise (i) international team leader/engineer’s representative, (ii) deputy team leader/senior resident engineer, (iii) international road maintenance specialist, (iv) senior materials engineer, (v) senior road maintenance engineer, (vi) two resident engineers, (v) two materials engineers, (vi) quantity surveyor, and (vii) survey engineer.

54. All international engineers shall be experts in their field with at least 15 years of experience in work in their related specialties in road construction and maintenance projects in developing countries. All domestic engineers should be degree qualified engineers or the equivalent, with a minimum of 5 year’s practical experience in the supervision and administration of road construction and maintenance works.

55. Based on 2 months’ pre-construction services for the Ulaanbaatar–Darkhan road plus 24 months’ time for completion, comprising 2 x 9 months’ construction period for each of the two works contracts, and an allowance for supervision of routine maintenance works, the following estimated person month inputs will be required:

#### **International Inputs**

- (i) Team Leader/Engineer’s Representative<sup>4</sup> –42 months comprising 2 months prior to construction + 36 months construction + 2 months Taking-Over Certificates and outstanding work + 2 months Performance Certificate inspections.
- (ii) Road Maintenance Specialist –28 months, comprising 2 months prior to construction + 20 months construction + 6 months during the maintenance only periods
- (iii) Road Safety Specialist –4 months

#### **National Inputs**

- (i) Deputy Team Leader/Senior Resident Engineer / Engineer’s Representative<sup>5</sup> –47 months comprising 2 months prior to construction + 36 months construction + 2 months Taking-Over Certificates and outstanding work + 6 months inspections during the maintenance only periods + 1 month Performance Certificate inspections.

<sup>4</sup> Up to and including the issue of the Taking Over Certificate for the Darkhan–Altanbulag road.

<sup>5</sup> Following completion of the construction works on Darkhan–Altanbulag road to authorize payments for routine maintenance works.

- (ii) Senior Materials Engineer –38 months comprising 2 months prior to construction + 36 months construction.
- (iii) Senior Road Maintenance Engineer –46 months comprising 2 months prior to construction + 40 months construction + 4 months during the maintenance only periods.
- (iv) Resident Engineers –2 x 36 months' construction.
- (v) Materials Engineers –2 x 36 months' construction.
- (vi) Quantity Surveyor – 9 months comprising 1 month prior to construction + 36 months construction + 1 month during Defects Notification Periods + 1 month Final Payment Certificates.
- (vii) Survey Engineer –38 months comprising 2 months prior to construction + 36 months construction.
- (viii) Road Safety Specialist –4 months
- (ix) Environmental Safeguard and Impact Assessment Specialist –24 months
- (x) Social Development, Gender, and Resettlement Specialist –24 months

56. The personnel specified above may be supplemented by the consultant with additional staff including an Office Manager, Translator / Interpreter and other support staff as necessary to properly perform the services.

## 5. Tasks and Qualification Requirements

### International Consultants:

57. **Team Leader/Engineer's Representative (TL/ER).** The TL/ER will be responsible for overall project management in performing the scope of work indicated in the Terms of Reference for the Consulting Services, namely for the overall successful completion of the design review, detailed design and supervision tasks for both works contracts. As Engineer's representative, the TL/ER shall act on behalf of the FIDIC Engineer. The specific focus of the TL/ER will be early identification of issues and proposing mitigation or preventive measures in all aspects of the scope of work. The TL/ER shall be responsible for providing solutions to the technical issues during the design review stage, as well as addressing issues potentially leading to claims and increase of costs in the civil works contract during the supervision stage, by effective management of the both design review and construction supervision components. Special attention will be given to claim / dispute resolution activities as well as prevention of delays during the construction supervision stage. The TL/ER will be responsible for preparation of variation orders and their submission for the approval to PIU and ADB. The TL/ER will also have advisory role on potentially expected or actual claims. The TL/ER shall prepare monthly, and all required reports and all type of documents as indicates in the Terms of Reference for the Consulting Services. During the construction supervision stage the TL/ER will lead all formal meetings with the Contractor, including monthly progress meetings.

58. **Qualifications and experience.** Degree in civil engineering preferably with post graduate qualification in highway engineering. Fifteen (15) years' experience in the design and construction supervision of road projects under the FIDIC Conditions of Contract including road maintenance works. The candidate should have a proven record of managerial capability through the directing/managing of major international civil engineering works, including projects of a similar magnitude financed by a major multilateral international lending agency. To include eight (8) years' international experience.

59. **Road Maintenance Specialist (RMS).** The RMS will be responsible for reviewing the preliminary designs for the periodic maintenance works prepared by the IA for both contracts; preparing scope of survey and investigation of existing pavement; evaluating results of surveys and

investigations and preparing detailed design of periodic maintenance works including standard details of treatments and schedule of locations; advising on routine maintenance works throughout the course of both contracts and providing advice and training to the Contractor, PIU and MRTD as required; and providing inputs to progress reports and meetings.

60. **Qualifications and experience.** Degree in civil engineering preferably with post graduate qualification in highway engineering. Fifteen (15) years' experience in the design and supervision of road maintenance works, including specific experience in the design and construction of surface dressing/sealing works. To include eight (8) years' international experience.

61. **Road Safety Specialist (IRSS).** The international consultant will be responsible for all road safety aspects of maintenance packages being implemented during the project, and for upgrading road safety standards, especially for international roads within Mongolia.

62. **Qualification and experience.** Senior level engineer with a bachelor's degree in a relevant field and extensive experience in implementing road safety improvements whether it is engineering, education/advocacy, or management interventions; and road safety audit training. Extensive experience in developing solutions to road safety challenges in developing countries is required.

63. **Qualification and experience.** At least a postgraduate degree on environmental management or relevant fields. A minimum of 7 years of work experience on environmental impact assessment, environmental management planning and monitoring, or relevant fields, experience on environmental impact assessment on road infrastructure projects in cold climate and climate adaptation for road projects. The expert will perform the following tasks with the assistance from the national environment safeguard and environmental monitoring specialist:

#### **National Consultants:**

64. **Deputy Team Leader/Senior Resident Engineer (DTL/SRE/ER).** The DTL/SRE/ER will be responsible for the detailed design of road safety improvement works including slow vehicle lanes; assist the TL/ER with the administration and supervision of road construction works including coordination and liaison with the Employer; day-to-day construction supervision through the Resident Engineers and other site staff; review of daily reports prepared by site staff; preparing and maintaining progress monitoring schedule; reviewing and approving shop drawings and preparation of as-built drawings. Following completion of the initial construction works on the Darkhan–Altanbulag road, the DTL/SRE will take over from the TL as the Engineers' Representative (ER) for the remainder of the project. Qualifications and Experience: Degree in civil engineering. Ten (10) years' similar experience in design and construction supervision of highway projects.

65. **Senior Road Maintenance Engineer (SRME).** The SRME will assist the RMS to scope out and supervise the surveys and investigations of the existing road pavement for both contracts and prepare the detailed designs of periodic maintenance works; monitor and audit routine maintenance works throughout the course of both contracts; and provide advice and training to the Contractor, PIU and MRTD on road maintenance as required. Qualifications and Experience: Degree in civil engineering with at least 5 years' experience in the design and supervision of road maintenance works.

66. **Senior Materials Engineer (SME).** The SME will be responsible for preparing the Quality Assurance plan; supervising the setting up, organization and layout of the Contractor's field laboratory for both contracts including monitoring the mobilization of the testing equipment to ensure that the laboratory is adequately equipped and capable of performing all the specified testing requirements of the Contract; and supervising the setting-up of the Contractor's rock crushers and asphalt concrete



batching plants to ensure that the specified requirements for such equipment are fully met. During the supervision stage the SME will supervise the testing and evaluation of highway construction materials delivered to and manufactured on site, including reviewing the mix designs for the asphaltic concrete pavement and the design of the surface dressing submitted by the Contractor. The SME, supported by the MEs, will be responsible for day-to-day supervision of compliance to material specifications and testing and certifying the construction in accordance with contract conditions including acceptance standards of materials, approval of source supply, and material testing methods. **Qualifications and Experience:** Degree in civil engineering preferably with post graduate qualification in geotechnical or material engineering. Ten (10) years' similar experience of establishing and managing quality assurance for the supervision of road construction works, laboratory and field testing of flexible pavement materials.

67. **Resident Engineers (RE).** The REs will report to the DTL/SRE and will be responsible for the day-to-day construction supervision of the works in the field for both contracts. **Qualifications and Experience:** Degree in civil engineering preferably with five (5) years' similar experience in construction supervision of highway projects.

68. **Materials Engineers (ME).** The MEs will report to the SME and will be responsible for the day-to-day supervision of compliance to material specifications and testing in the field for both contracts. **Qualifications and Experience:** Degree in civil engineering preferably with 5 years' similar experience in supervision of road construction and maintenance works, and laboratory and field testing of earthworks and flexible pavement materials as part of the quality assurance process.

69. **Quantity Surveyor (QS).** The QS will assist the DTL/SRE in the measurement of the works and materials on Site, checking Contractor's Statements, preparing Interim Payment Certificates, and evaluating variation orders for both contracts. **Qualifications and Experience:** Degree in civil engineering preferably with 5 years' experience as a quantity surveyor/measurement engineer in the construction of highway projects executed under FIDIC Conditions of Contract.

70. **Survey Engineer (SE).** The SE will work with the DTL/SRE in the preparation of detailed designs for proposed road safety improvement works including carrying out topographic surveys of work sites and preparing detailed design drawings; checking the setting out the Works by the Contractor; and the preparation of as-built drawings for both contracts. The SE will also work with the QS to measure completed works. **Qualifications and Experience:** Degree in civil engineering and/or qualified and registered topographic surveyor preferably with 5 years' experience as a Survey Engineer in the design and construction of highway projects.

71. **Road Safety Specialist (NRSS)** The NRSS will assist the IRSS for all road safety aspects of maintenance packages being implemented during the project, and for upgrading road safety standards, especially for international roads within Mongolia. **Qualifications and Experience.** Senior level engineer with a bachelor's degree in a relevant field and extensive experience in implementing road safety improvements whether it is engineering, education/advocacy, or management interventions; and road safety audit training. Extensive experience in developing solutions to road safety challenges in developing countries is required.

72. **Environment Safeguard and Impact Assessment Specialist (ESIAS).** The ESIAS will closely work with the PIU and the DTL/SRE and support the EA and PIU in (i) meet full environmental compliance of the project throughout the project implementation; (ii) preparing EMP provisions for the bidding document and contract; (iii) Conduct environmental impact monitoring indicated in the environmental monitoring plan of the EMP (this task may be subcontracted to an environment monitoring firm/individual licensed by the Ministry of Environment and Tourism (MEDT)); (iv) coordinate with the environmental monitoring stations/firm to ensure EMP and EMoP to be duly

implemented; (v) . Conduct regular site visits and assess the EMP implementation. Any non-compliance is found, report your concern and propose a corrective action(s) to contractors and the PIU; record non-compliance and implementation of corrective actions in EMRs; (vi) During the regular site visits, conduct public survey to affected communities and inform GRM and ensure any additional concern to be heard and be appropriately dealt with; (vii) Develop an EMP training program and provide a series of training to staff from the EA, PIU, and contractors on environmental safeguard requirements under the Mongolian environmental laws and regulations, and ADB's Safeguard Policy Statement (2009), including EMP, monitoring and reporting requirements of the initial environmental examination (IEE) and EMP, grievance redress mechanism (GRM), preparation and implementation of construction site EMP, and other international best practices on environmental, health and safety management; and (viii) Prepare annual environmental monitoring reports with quality and submit to the EA through PIU and ADB, incorporating all the comments from PIU, the EA, and ADB; (ix) Support domestic EIA institute in their preparation of domestic EIA to be submitted and approved in a timely manner; and If any change in the project scope, and engineering design change occurred during the project implementation, assess the need of IEE, EMP, EMoP revision; consult with PIU, the EA, and ADB for revision and/or addition; and prepare and submit revised documents accordingly.

**Qualifications and Experience.** At least a postgraduate degree on environmental science, environmental engineering, or relevant fields, a minimum of 5 years of work experience on environmental impact assessment, environmental management planning and monitoring. Having experience on environmental impact assessment on road infrastructure projects will be an advantage. The specialist must be fluent in English both in writing, speaking, and understanding.

73. **Social Development, Gender, and Resettlement Specialist (SDGRS).** The SDGRS will coordinate the overall capacity building support, guidance and oversight on resettlement, social development and gender. The SDGRS will also (i) Prepare a detailed work plan including a training plan to include in the inception report; (ii) Closely communicate and coordinate with the EA and PIU (social development specialist) to meet full social safeguards and social development related compliance of the project throughout the project implementation; (iii) Provide oversight on actual GAP/SDGAP implementation; conduct site visits to assess, guide and propose corrective action(s) to the PIU if any; record non-compliance and implementation of corrective actions and send special reports to ADB and EA; (iv) Provide oversight during construction period on any temporary impacts if any including its compliance to ADB's policies and summarize it into the quarterly reports to be submitted by PMCBC consultants to EA and ADB; (v) Conduct capacity building trainings/ workshops to PIU staff, relevant government officials including those at soum, aimag levels, contractors and any other relevant stakeholders outlined in GAP/SDGAP on ADB's safeguards policies, relevant social policies including GRM in effective implementation of GAP/SDGAP; and (vi) Conduct public survey with communities and assess effectiveness of GRM and ensure any additional concern to be heard and be appropriately dealt with. **Qualifications and Experience.** Shall have a Master's in social sciences / anthropology / sociology with 10 years of experience of working in the resettlement and other social development areas.

## 6. Reporting Requirements

74. The Consultant will prepare and submit to PIU five copies of each of the under mentioned reports together with softcopy. The format of these reports shall be mutually agreed with the PIU. One softcopy shall be sent directly to ADB:

- (i) **Inception Report:** The Consultant will submit an Inception Report within one month after mobilization. This will contain full details of the consultant's supervision and contract administration methodology and staff plan with projected monthly billing.
- (ii) **Design Review Report: Ulaanbaatar–Darkhan Road.** The consultant will submit a detailed Design Review Report for the Ulaanbaatar–Darkhan road within two months

after mobilization, indicating the proposed Program for surveys and investigations, detailed design of periodic maintenance treatments and road safety improvements; and approach to detailed design including standards to be adopted and guides to be followed.

- (iii) **Design Review Report: Darkhan–Altanbulag Road.** The consultant will submit a detailed Design Review Report for the Darkhan–Altanbulag road prior to the 2019 construction season, indicating the proposed Program for surveys and investigations, detailed design of periodic maintenance treatments and road safety improvements; and approach to detailed design including standards to be adopted and guides to be followed. This will include a detailed discussion on experience gained, and lessons learned, during the design and construction of the Ulaanbaatar–Darkhan road.
- (iv) **Monthly Progress Reports:** The Consultant will, no later than the 10th of each month, prepare a narrative progress report for each contract summarizing:
  - a. Construction progress during the month and cumulative to date drawing specific attention to any major causes of delay (administrative, technical or financial) with details of remedial action taken or recommended to the Employer.
  - b. A comparison of actual and forecast expenditure both during the month and cumulative to date, and a record of the status of Contractor's Statements and payment of IPCs, of all claims for cost or time extensions, and of actions required of PIU to permit unconstrained works implementation. The Consultant will also advise on the final estimated cost of the contract and draw attention to any major changes including details of remedial action taken or recommended to the Employer.
  - c. Brief on all correspondence exchanged with the Contractor particularly relating to contractual clauses, with financial and time implications.
  - d. Technical appreciation of any design or quality control problems for each individual contract including details of remedial action taken or recommended to the Employer.
- (v) **Network Performance Report:** The Consultant will, no later than the 10th of each month, prepare a narrative report for each contract covering the routine maintenance component of the works summarizing:
  - a. Road lengths audited during the month, and resulting audit findings.
  - b. The Network Performance Score, and associated payment deduction for non-compliance with the performance standards.
  - c. All correspondence exchanged with the Contractor particularly relating to contractual clauses, with financial and time implications.
  - d. Summary of training/advice giving to the Contractor in relation to the repair of defects or achievement of compliance with the performance standards.
  - e. Any other issues that the Employer should be aware of by exception reporting methods.
- (vi) **Technical Reports:** The Consultant will produce as necessary technical/due diligence reports and position papers dealing with project matters during implementation
- (vii) **Interim Contract Completion Reports:** The Consultant will prepare a completion report for each Contract within 30 days of issuance of the Taking-Over Certificate. This report shall summarize the implementation and financial history of the contract, the list of defects provided to the Contractor and all outstanding claims pending resolution.
- (viii) **Final Contract Completion Reports:** The Consultant will prepare a completion report for each Contract within 30 days of issuance of the Performance Certificate. This report shall summarize the implementation and financial history of the contract, details of any defects identified and remediated, and a detailed review of the routine maintenance

works, including a summary of the works performed, the cost of the maintenance broken down by activity and an evaluation of the performance of the Contractor.

- (ix) **Safeguards Reports:** The IESS will prepare and finalize a climate risk and vulnerability assessment report while incorporating ADB comments. The IESIAS will prepare, following the instruction and guidance from the IESS, prepare an IEE, including EMP, EMoP, GRM, and EMP budget, while ensuring the quality to be met to the ADB safeguards policy statement (SPS) and its requirements. The SDGRS will prepare:
- a. Capacity building and training plan to be included in the inception report;
  - b. Special reports on workshops and seminars, as appropriate, within 1 week of event, if any;
  - c. Summary of compliance including all other activities conducted by the consultant on social safeguards (if any for the unidentified subprojects under output 2) and SDGAP activities for output 1 (and output 2 - when prepared), in the quarterly reports; and
  - d. Separate reports as appropriate to EA and ADB on noncompliance issues (if identified) with proposal of corrective actions included in close coordination with the PIU consultant.

## 7. Client's Input and Counterpart Personnel

75. The PIU under MRTD will serve as the liaison between MRTD, consultants and contractors, and shall be responsible for the overall project management.

76. The IA will provide, through provision in the two civil works contracts, logistical support consisting of support staff, equipment, vehicles and office/residential accommodation. This will include:

- (i) Site offices, including buildings, maintenance and insurance, utilities, furniture and air-conditioning, computers, printers, scanners, photocopiers, office stationary and consumables including printing consumables;
- (ii) Support staff including cleaners, survey assistants and labor;
- (iii) Communications including hardware, installation and usage cost of telephones (landline or mobile) and internet access;
- (iv) Vehicles, including site vehicles appropriate to the number of supervision staff, drivers, fuel, maintenance, taxes and insurance;
- (v) Equipment including topographic survey and inspection equipment and personal protective equipment (PPE);
- (vi) Applicable Codes and Standards
- (vii) Accommodation local to the Site appropriate to the number of supervision staff including maintenance, insurance and utilities;
- (viii) Support staff comprising chainmen for surveying work and office assistants.

77. The IA shall also provide all relevant project reports, documents, etc. relating to the project.

78. In order to complete surveys and investigations and prepare detailed designs for the first section of the Ulaanbaatar–Darkhan road, it is intended that the Design and Supervision Consultant will mobilize prior to signing of the works Contract. The Consultant should therefore allow for the provision of temporary office facilities and transport for up to 3 months following mobilization.

79. No other facilities, equipment, logistical support, or other things will be provided during the services. The consultant shall therefore be responsible for all costs associated with accommodation away from the Site locality and any other costs necessary for the performance of the services.

### SOCIAL DEVELOPMENT AND GENDER ACTION PLAN

No.	Proposed action	Targets & Activities	Agencies Responsible	Timing	Funding	Monitoring indicators
1.	Employment and income generation	<p><b>Target</b>– local population in the project affected area (especially local herders, poor &amp; vulnerable peoples; women)</p> <p><b>Activities:</b></p> <p>i) At least 30% of construction unskilled labor hired locally - local herders, poor and vulnerable given equitable allocation.</p> <p>ii) Of these 30% construction jobs, 10% to be provided to local women willing to work.</p> <p>iii) During construction, locals<sup>a</sup> may earn income from establishment of small eateries, lodging, small provision stores based on the needs.</p>	<p>PIU to ensure local employment targets are in contract clauses, Contractors to ensure that the employment opportunities are publicized and made available to local peoples.</p> <p>PIU social development specialist (consultant) will monitor all activities and clearly include the result of these activities in Social Development Action Reports of the Project</p>	2018-2020	Project Contractor's fund	<p>Number of local herders, poor and vulnerable people and women provided employment</p> <p>Total number of employment (days) provided</p> <p>Sex disaggregated data</p> <p>Number of local enterprises supported as service providers</p>
2.	Occupational health and safety	<p><b>Target</b> – construction workers.</p> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>– Enforcement of contract clause with employees (6.7. Health and Safety law)</li> <li>– occupation health &amp; safety awareness trainings for construction worker, drivers</li> <li>– Personal Protective Equipment (PPE) - (helmets &amp; fluorescent clothing) provided to construction workers</li> </ul>	<p>PIU ensures that health and safety clause is included in contracts</p> <p>PIU social development specialist (consultant) together with environment consultant and other PIU staff will provide training and safety gears to the workers and will monitor all activities as indicated in the Contract Agreement.</p>	2018 -2020	Fund from contractor's budget	<ul style="list-style-type: none"> <li>– Number of trained workers in occupational safety</li> <li>– No of PPEs distributed</li> <li>– Training reports</li> </ul>
3.	Consultation and participation activities	<p><b>Target</b> - people under the project impact zone especially, women, herders, poor and vulnerable groups.</p> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>– At least 40% of total participants in community and household meetings on project construction activities on project information including project benefits and mitigation measures are from</li> </ul>	<p>PIU through Social development consultant to organize consultations and material distribution.</p> <p>Implementation oversight by PMC social development, gender and resettlement specialist (consultant).</p> <p>The result of all activities will be clearly included in semi-annual Social Development Action Reports of the Project.</p>	2018-2020	Project fund USD 3,000 each year in 2 aimags. (A total of \$18,000)	<ul style="list-style-type: none"> <li>– Number of consultations undertaken (community &amp; households)</li> <li>– Number of people participated data disaggregated by gender</li> <li>– Number of pamphlets (printed material) developed</li> <li>– Number of pamphlets (printed material) distributed</li> </ul>

No.	Proposed action	Targets & Activities	Agencies Responsible	Timing	Funding	Monitoring indicators
		female headed and poor households				
4.	Prevention of HIV/AIDS, STI's	<p><b>Target</b> - Project construction workers, local population along the road, especially close to the Russian border zone with a focus on women and poor households; mobile population such as truck drivers, tourists;</p> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>- Developing training and awareness building material on HIV/AIDS &amp; STI prevention</li> <li>- Awareness building activities- at least 50 % of total participants are from poor and vulnerable households including women</li> <li>- Organizing condom promotion days</li> <li>- Conducting health checks for HIV/AIDS and other STI in local soums and aimag centers along the project road</li> </ul>	<p>PIU to ensure that contractors include HIV/AIDS prevention as part of the workplace safety training;</p> <ul style="list-style-type: none"> <li>- Contractors provide prevention training and distribute condoms and organize voluntary testing;</li> <li>- PIU social development specialist (consultant) to coordinate with Social Policy Division Health Departments of Tuv, Darkhan and Selenge Aimags to organize training for the local communities;</li> <li>- Monitored by PIU and SDS.</li> <li>- The result of activities will be clearly included in Social Development Action Reports of the Project.</li> </ul>	2018-2020	<p>Project fund.</p> <p>USD 10,000 each year, for aimags. (A total of \$30,000)</p>	<ul style="list-style-type: none"> <li>- Number of training curriculum, information materials developed</li> <li>- Number of workshops conducted and number of participants, by gender</li> <li>- Number of condoms distributed</li> <li>- Number of people involved in health checks, by gender</li> </ul>
5.	Prevention of Trafficking in Persons (TIPs)	<ul style="list-style-type: none"> <li>- Awareness building activities (especially women and girls) on human trafficking - At least 50% of total participants are from poor and female headed households</li> <li>- Coordinate with public officials (immigration, border protection officers, employment, health and education service providers, police officers)</li> <li>- Trainings, publication of brochures on social and gender issues such as HIV, AIDS, TIPs for residents and workers</li> <li>- A brochure and training on social, gender issues including TIPs for soum schools, vocational schools and other relevant local groups</li> </ul>	<ul style="list-style-type: none"> <li>- PIU Social development specialist (consultant) of the Project to coordinate with Ministry of social welfare, NGO, General border agency to implement the activities; National Center Against Violence.</li> <li>- Monitored by PIU and Executing Agency.</li> <li>- A brochure and training material preparation by Social Development Specialist (PIU)</li> </ul>	2018-2020 During construction season	<p>Project fund</p> <p>USD 5,000 each year for 2 project aimags. (A total of \$30,000)</p>	<ul style="list-style-type: none"> <li>- Number of developed training and awareness building material</li> <li>- Number of workshops conducted and number of local participants and construction workers</li> <li>- Number of participants of trainings dedicated for school students, by gender</li> <li>- Number and types of information materials disseminated</li> </ul>

No.	Proposed action	Targets & Activities	Agencies Responsible	Timing	Funding	Monitoring indicators
6.	Road safety Awareness	<ul style="list-style-type: none"> <li>– Building of road signs and speed breaker at the area identified as black spots</li> <li>– Road safety awareness building campaign for local communities, school children and construction workers in consultation with local women</li> <li>– Road safety awareness raising activity specifically for male residents and drivers</li> <li>– Coordination with traffic police</li> <li>– Development and dissemination of awareness building material on road safety in consultation with local women</li> <li>– 2 local soums and aimag center along the project road</li> </ul>	<ul style="list-style-type: none"> <li>– PIU through road safety specialists identifies black spots and installs safety measures;</li> <li>– PIU social development specialist (consultant) of the project coordinate with local traffic police and local communities to provide road safety awareness development and dissemination of material</li> <li>– Monitored by PIU and Executing Agency,</li> </ul>	2018-2020	Project fund  USD 3,000 each year, for two aimags. (A total of \$ 9,000) .	<ul style="list-style-type: none"> <li>• Number of sidewalk provision, centerline widening, shoulder mumble strips</li> <li>• Number of road safety awareness materials developed and distributed</li> <li>• Reports of campaign to prevent road accident Number of trained policemen, local drivers and contractors</li> </ul>
7.	Support for local development initiatives	<ul style="list-style-type: none"> <li>– Training on setting up small businesses, income generation methods alongside the road corridor, to be organized by local NGOs</li> <li>– Trainings on setting up small business on agricultural production and service sector - at least 40% of total participants from local women</li> <li>– Sex disaggregated training needs assessment survey needs to be made</li> </ul>	<ul style="list-style-type: none"> <li>– PIU social development specialist (consultant) to coordinate local governor office, Soum representatives Rural, NGOs.</li> <li>– Monitored by PIU and Executing Agency</li> </ul>	2018-2020	Project fund  \$15,000 for 2 soums and aimag center (a total of \$30,000)	<ul style="list-style-type: none"> <li>• Number of households provided training by location,</li> <li>• Number of trained participants in micro enterprise activities, by age and sex</li> </ul>

<sup>a</sup> Usually, it is a family-run establishment.

## ENVIRONMENTAL MANAGEMENT PLAN

### A. Objectives

1. The environmental management plan (EMP) in line with ADB's SPS 2009, covers all phases of implementation from preparation to operation. It aims to ensure the monitoring of environmental impacts and activation of environmental mitigation measures. Relevant parts of the EMP will be incorporated into the construction, operation, and management of each output.

### B. Implementing Organizations and Their Responsibilities

2. The key organizations responsible for implementing the project and the role in Environmental Safeguards implementation are set out in Table A1.1.

**Table A1.1: Implementing Organizations**

General Role & Responsibilities	Role in Environmental Safeguards
<b>Ministry of Road Transport Development (MRTD)</b>	
<ul style="list-style-type: none"> <li>• Executing agency (EA)</li> <li>• Establishes and chairs a Project Steering Committee (PSC)</li> <li>• Establishes a Project Implementation Unit (PIU)</li> </ul>	Overall responsibility for ensuring environmental safeguard are implemented
<b>Project Steering Committee (PSC)</b>	
<ul style="list-style-type: none"> <li>• Chaired by Director General, MRTD</li> <li>• Provides project oversight</li> <li>• Includes representatives of the MRTD, Ministry of Finance,</li> </ul>	Support and specific advice to EA on specific safeguard issues if needed
<b>Project Implementation Unit (PIU)</b>	
<ul style="list-style-type: none"> <li>• Implementing Agency (IA)</li> <li>• Reports to EA</li> <li>• Project implementation and supervision</li> <li>• Preparing and submission of implementation reports to ADB</li> <li>• PIU staff to include part-time Environmental Monitoring Consultant</li> </ul>	<ol style="list-style-type: none"> <li>1. Ensure Bidding Documents and Contracts include EMP and any relevant Particular Clauses or Conditions relevant to Environmental Safeguards as set out in this IEE.</li> <li>2. Implementing and supervising EMP and other safeguard plans</li> <li>3. Provision of safeguard reports to EA</li> <li>4. Provision of specialist consultant to perform the function of PIU Environmental and Social Officer</li> <li>5. Dissemination &amp; Implementation of Grievance Redress Mechanism (GRM)</li> </ol>
<b>PIU Environment and Social Officer (PIU ESO)</b>	
<ul style="list-style-type: none"> <li>• EMP implementation, including monitoring and reporting</li> </ul>	<ol style="list-style-type: none"> <li>1. Ensure tender documents specify requirements of EMP</li> <li>2. Ensure that EMP considerations are incorporated in the detailed designs and included in civil works contracts</li> <li>3. Training for contractor/engineers in implementing EMPs</li> <li>4. Site inspections and progress reporting. EMP update after detail project design</li> <li>5. Input into Grievance Redress Mechanism (GRM)</li> <li>6. Conducting consultation meetings with local stakeholders as required, informing them of imminent construction works, updating them on the latest project development activities, GRM (see Appendix 2 for Environmental Monitoring Interview Form sample)</li> </ol>
<b>Project Management Consultant (PMC)-Loan Implementation Environment Consultant (LIEC)</b>	
<ul style="list-style-type: none"> <li>• Implementation and capacity development consultancy support to PIU</li> </ul>	<ul style="list-style-type: none"> <li>Support safeguard issues as required</li> <li>Support PIU in preparing EMRs</li> </ul>
<b>Design and Construction Supervision Company(s)</b>	
<ul style="list-style-type: none"> <li>• Design of the maintenance in sections</li> </ul>	Collaboration with PIU-EMS on final designs to ensure acceptable mitigation of environmental impacts



• Construction supervision	
Construction Companies	
• Completion of road sections as specified	1. Environmental Control Engineer responsible for daily monitoring and supervision, and evaluation of mitigation measures' implementation
• Provision of Environmental Control Engineer	2. Develop and implement construction site specific EMP (CEMP). 3. Reporting on CEMP mitigation measure implementation

3. **Institutional Strengthening and Capacity Development.** In order to strengthen the capacity of the EA and IA, the project includes Output 3, related to capacity development in project supervision and implementation, including standard project supervision. This also includes training in maintenance, procurement and safeguards, and piloting of new technologies, and environmental safeguards and environmental management is also recommended. Table below show training program to enhance environmental safeguards and environmental management of the project.

Table 1. Training Program

Training	Attendees	Contents	Times	Period (days)	No. of persons	Cost (\$/person /day)	Total Cost
<b>Construction Phase</b>							
<b>ADB, Mongolia and International EHS standards, regulations and policies, including GRM</b>	PIU, contractors	<ul style="list-style-type: none"> <li>– ADB's safeguard policy statement</li> <li>– International environmental, health and safety management practice in civil construction</li> <li>– International environmental, health and safety management practice in civil construction</li> <li>– GRM structure, responsibilities, and timeframe</li> <li>Types of grievances and eligibility assessment</li> </ul>	Twice - once prior to, and once after one year of project implementation	1	20	100	\$2,000
<b>Implementation of EMP and EMoP, including construction plans</b>	PIU, IA, contractors	<ul style="list-style-type: none"> <li>– Impacts and mitigation measures</li> <li>– Monitoring and auditing mechanism</li> <li>– Reporting requirements</li> <li>– Issue of non-compliance and corrective actions for EMP, EMoP and GRM.</li> </ul>	Twice - once prior to, and once after one year of project implementation	1	20	100	\$2,000
<b>Total estimated cost:</b>							<b>\$4,000</b>

EHS=Environment, Health and Safety, EMP = Environmental management plan, EMoP=Environmental Monitoring Plan, GRM=Grievance redress mechanism, PIU = Project implementation unit.

### **C. Mitigation Measures**

4. Table 47 presents the mitigation measures, costs and responsibilities for each relevant environmental impact as determined by the screening process. Included in the mitigation measures is the institution responsible for implementing and overseeing each.

### **D. Monitoring**

The contractors and design and construction supervision company will be required to conduct proper EMP performance monitoring. The PIU Environment Officer will conduct regular site visits and EMP performance monitoring with support from the LIEC so to assess effectiveness of EMP implementation. Depending on construction schedule, receptors in the vicinity (such as nomadic herders who may come into and out of construction areas) and potential impact levels, the frequency and scale of EMP performance monitoring will be adjusted by the PIU Environment Officer.

5. Table 45 presents the monitoring plan. It is targeted at monitoring the key receptors as set out in the baseline survey. The receptors are: i) Humans (impacted on by noise and dust); ii) Flora (impacted on by tree removal and potential haul roads). If there is any, additional monitoring requirements of an approved DEIA under Mongolian law will be incorporated into the monitoring plan, which may need the update of the monitoring plan.

6. Table 46 presents the monitoring program estimated budget based on current costs in Mongolia. These represent likely maximum costs for one year however not all analysis is required each year as it is dependent on the location of the road sections under construction sites. Environmental monitoring activity for a given month shall only be conducted at locations that lie within active construction areas that month. The construction season lasts 6 months in Mongolia, between April and October; the EMP will be monitored monthly. The monitoring parameters and frequency will be aligned with the DEIA requirements. This EMP and EMoP will be updated after the DEIA approval and also during detailed design and the precise locations and frequency of monitoring will be established.

**Table 2: Mitigation Measures**

<b>Environmental Impact/Issue</b>	<b>Area of concern</b>	<b>Mitigation measures</b>	<b>Timeframe and frequency</b>	<b>Cost (\$)</b>	<b>Implemented by</b>	<b>Supervised by</b>
<b>Pre-Construction Phase</b>						
Environmental Management System		<ul style="list-style-type: none"> <li>Institutional set up and strengthening. Recruitment of (a) appointment of a qualified Environment and Social Officer within the PIU by the IA; and (b) contracting of a Loan Implementation Environmental Consultant (LIEC) will be carried out. Prior to the start of construction, the institutional strengthening and training program will be delivered by the LIEC. The training will focus on ADB's and PRC's relevant environmental, health and safety laws, regulations and policies; implementation of the EMP, environmental monitoring, and the GRM. Training will be provided to the PIU, and contractors.</li> <li>Grievance Redress Mechanism. In accordance with the GRM (see Chapter VIII and Appendix I), the PIU Environment and Social Officer will assume overall responsibility for the GRM. The PIU will issue public notices to inform the public within the project area of the GRM, and contact information (GRM website address, PIU address and telephone number, PIU contact point email address) and</li> </ul>	Before construction	Included in operational costs	PIU/Contract or/DCSC	PIU

local entry points (e.g. contractors).

- Updating the EMP (if required): Mitigation measures defined in this EMP and the EMoP will be updated based on final technical design. This will be the responsibility of the PIU Environment and Social Officer and the LIEC. Submit to ADB/PIU for approval and disclose updated EMP on project and ADB website.
- EMP in bidding document. The project specific EMP will be incorporated in the bid documents and construction contracts
- Disclosure and Consultation: Information disclosure and consultation activities will be continued with affected people and other interested stakeholders, including but not limited to the project implementation schedule, GRM and status of compensation (if relevant).

Construction Phase						
Air Quality – Dust & Vehicle Emissions	Construction sites, borrow pits and stockpiling areas	<ul style="list-style-type: none"> <li>• Good construction management practices will be implemented to control construction dust. Water will be sprayed for construction sites, material handling areas, and borrow pits where fugitive dust is generated.</li> <li>• Water will be sprayed for construction sites, material</li> </ul>	Continuously during construction	Included in operational costs	Contractor/D CSC	PIU EO, LIEC

		handling areas, and borrow pits where fugitive dust is generated.				
	Both Outputs: Asphalt batching facilities	<ul style="list-style-type: none"> <li>Asphalt batching facilities will be located at least 500m downwind from the nearest dwellings in order to reduce the impact of fumes on humans and to be fitted with necessary equipment such as bag house filters to reduce fugitive dust emissions.</li> </ul>	Continuously during construction	Included in operational costs	Contractor	PIU EO, LIEC
	Construction vehicles and trucks	<ul style="list-style-type: none"> <li>Construction vehicles and machinery will be maintained to a high standard to minimize emissions.</li> <li>Trucks carrying stone chippings for surface dressing will be covered with tarpaulins or other suitable cover.</li> </ul>	Continuously during construction	Included in operational costs	Contractor/D CSC	PIU EO, LIEC
Soil erosion	Borrow areas	<ul style="list-style-type: none"> <li>Site specific borrow management plan will be developed and approved by relevant soum authority.</li> <li>A map of all borrow sites will be developed and maintained;</li> <li>Safety measures, if required, will be implemented to prevent access by members of the public and livestock;</li> <li>Measures for control of dust during extraction, handling and transport of materials; and</li> <li>Measures to rehabilitate the borrow sites include contouring of the slopes within each site and reseeded sites with native species.</li> </ul>	Continuous during borrow areas management and end of construction	Included in operational costs	Contractor/D CSC	PIU EO, LIEC

Solid waste management	Construction sites, construction camps, and construction vehicle/driver' waste	<ul style="list-style-type: none"> <li>• The waste hierarchy to ensure efficient use and management of resources will be applied so that priority is to prevent waste at source as much as possible.</li> <li>• Effective management of materials on site through good house-keeping and work planning will be carried out.</li> <li>• Detail arrangements for storage and transportation of the waste to its disposal point will be made.</li> <li>• Hazardous waste, if any, will be handled and transported, and further disposed by a specialized agency with proper license.</li> <li>• Closely coordinate and obtain agreements with relevant aimag or soum authorities for waste management, including transportation and disposal of wastes. Ensure any contractors used to transport waste are approved by aimag authorities.</li> <li>• Prohibit burning of waste at all times.</li> <li>• Provide all vehicles/drivers with plastic bags for waste collection and prevent any unauthorized waste disposal.</li> </ul>	Continuous during construction	Included in operational costs	Contractor/D CSC	PIU EO, LIEC
Noise	Both Outputs: All construction sites	<ul style="list-style-type: none"> <li>• Maintain all exhaust systems in good working order; undertake regular equipment maintenance;</li> <li>• Restrict construction activities using heavy machinery work between 9am-6pm where the climbing lane is constructed nearby residential areas in</li> </ul>	Continuous during construction	Included in operational costs	Contractor/D CSC	PIU EO, LIEC

		<p>Darkhan, to avoid any unnecessary disturbances;</p> <ul style="list-style-type: none"> <li>• Provide advance warning to the community on timing of noisy activities. Seek suggestions from community members to reduce noise annoyance. Public notification of construction operations will incorporate noise considerations; information procedure of handling complaints through the Grievance Redress Mechanism will be disseminated.</li> <li>• Ensure noise monitoring is undertaken near sensitive receptors, particularly dwellings when construction machinery is operational.</li> </ul>				
Flora	Impacts on pasture land induced by borrow areas	<ul style="list-style-type: none"> <li>• Minimize the scale of borrow areas as much as possible</li> <li>• Restoration measures immediately after construction is completed.</li> </ul>	During construction	Included in operational costs	Contractor/D CSC	PIU EO, LIEC
	Trees and shrubs encroached to road right-of-way	<ul style="list-style-type: none"> <li>• Tree removal from the existing road right-of-way and road drainage area and relocating them with aftercare will be arranged and carried out through close coordination with and approval from Environment Department of Selenge aimag</li> </ul>	During construction	Included in operational costs	Contractor/D CSC	PIU EO, LIEC, Selenge Aimag Env. Department
Surface and Groundwater Protection	corridor	<ul style="list-style-type: none"> <li>• Demarcation of all wells within 100m of the road will be installed using high visibility markings and a sign. The demarcation will be confirmed with the necessary soum authorities like Sumber soum, Bayantal soum, Bayan soum and Sergelen soum.</li> </ul>	Beginning of construction period	Included in Contractor operational costs	Contractor/D CSC	PIU EO, LIEC, Soum authorities



	Darkhan-Altanbulag corridor	<ul style="list-style-type: none"> <li>• Good construction management and practices will be carried out to ensure construction works do not encroach on the surface water.</li> <li>• Demarcation with high visibility tape and signs will be installed at river crossings and Shariin Tsagaan Nuur to warn contractors of the need for vigilance in these areas.</li> </ul>	Beginning of construction period and during construction	Included in contractor operational costs	Contractor/D CSC	PIU EO, LIEC,
Occupational Health and Safety.	All construction sites	<ul style="list-style-type: none"> <li>• Train and ensure all construction workers to be aware of potential work hazards and risks.</li> <li>• Provide personal protection equipment (PPE), such as safety boots, helmets, gloves, protective clothing, goggles, and ear protection, in accordance with relevant health and safety regulations, for workers.</li> <li>• Document and record any occupational accidents and incidents. Review the records and incorporate them into further training.</li> <li>• An emergency response plan will be developed and implemented to take actions on accidents and emergencies, including; Worker injury (e.g. construction or traffic accident); Spillage (e.g. fuel spillage); Fire (e.g. fuel storage area or asphalt batching); Dust storm; and any other incidents anticipated by the contractor. Emergency phone contacts with hospitals in the nearest soum or aimag will be established. A first-</li> </ul>	Throughout construction	Included in contractor operational costs	Contractor/D CSC	PIU EO, LIEC,

aid point will be established at each construction site.						
Community Health and Safety	Settlements near all construction sites	<ul style="list-style-type: none"> <li>• Clear signs will be placed at construction sites in view of the public, warning people of potential dangers such as moving vehicles, or hazardous materials.</li> <li>• All sites will be made secure through access control by installing fences and/or security personnel, whenever appropriate.</li> <li>• In addition, through informing soum authorities, communities will be made aware of the road maintenance and clear sign boards will be visible providing GRM details.</li> <li>• borrow pits will be managed to ensure unauthorized or accidental access to the sites by the public and livestock.</li> </ul>	Throughout construction	Included in contractor operational costs	Contractor/D CSC	PIU EO, LIEC,
Cultural Heritage	Suld Ovoo in corridor, the tomb at Bayan Hutual, 100 m from the road in Darkhan-Altanbulag corridor.	<ul style="list-style-type: none"> <li>• Demarcate the Ovoo with high visibility tape and a sign through close coordination with Bayantal soum</li> <li>• Consult with the Archaeological Institute of Mongolia and coordinate with relevant soum, and demarcate the tomb at Bayan Hutual with high visibility tape and a sign</li> </ul>	Beginning of construction period	Included in contractor operational costs	Contractor/D CSC	PIU EO, LIEC, Soum authorities
<b>Operation Phase</b>						
N/A		•				

DCSC=Design and construction supervision company, LIEC=Loan implementation environment consultant PIU, EO=Project Implementation Unit Environment Officer.

Source: ADB PPTA team (2017).

**Table 3: EMP Monitoring**

Monitoring parameters	Units	Frequency	Indicative Location	Scope of work	Corresponding standards	Maximum allowed level
Dust level-TSP, PM10	mg/m <sup>3</sup>	Quarterly during construction season	Six locations for each road corridor			
			<ul style="list-style-type: none"> <li>•At receptors within 100m of active construction work and borrow sites, contractors camp (if required).</li> </ul> Receptors include housing areas, nomadic herder sites (if relevant) and businesses	Carry out dust measurements at the selected monitoring spots using 'Dust Trak' on monthly basis.	MNS17.2.3.16-88 MNS3384-82 MNS4585-2016 MNS 5885:2008 MNS 3384-1982	Dust<150 mg/m <sup>3</sup>
Noise level	dBA (1hr LAeq)	Quarterly during construction season	Climbing lane construction sites			
			<ul style="list-style-type: none"> <li>•At receptors within 50m of active construction work.</li> </ul> Receptors include housing areas, nomadic herder sites (if relevant) and businesses.	Carry out noise measurements at the selected monitoring spots on monthly basis.	MNS5002:2008 MNS 0012-9-015-87	1hr LAeq 60dBA
EMP Mitigation Measures	Environmental Monitoring (EMR) Monthly construction	Report during	At locations as indicated in the EMP Mitigation Measures table	PIU-EO will be responsible for monitoring the mitigation measures through field visits and reporting.		

**Table 4: Monitoring Budget**

<b>Monitoring parameters</b>	<b>Cost (\$ USD) –Per Year</b>
	<b>Output 1a</b>
Dust level-TSP, PM10	\$100x6 x 6 = \$3,600
	<b>Output 1b</b>
	\$100x2 x 6 = \$3,600
	<b>Output 1a</b>
Noise level	\$100x 6 x6 = \$3600
	<b>Output 1b</b>
	\$100x 6 x6 = \$3600
	<b>Output 1a</b>
Tree relocation & pasture replanting	\$1000
	<b>Output 1b</b>
	\$5000
	<b>Output 1a</b>
Health and Safety	\$5000
	<b>Output 1b</b>
	\$5000
EMP performance monitoring	PIU budget cost for PIU-EMS
<b>Total Costs</b>	<b>\$30,400</b>

**E. Reporting**

7. Regular reporting on the implementation of mitigation measures and on monitoring activities during construction phase of the component is required. Reporting is the responsibility of IA and EA. Environmental monitoring reports (using ADB's integrated safeguards monitoring report format) will be prepared quarterly by the IA/EA in collaboration with PMU-EMS and sent to MET and ADB. Table 5 provides reporting requirements.

**Table 5: Reporting Requirements**

<b>Report</b>	<b>Frequency</b>	<b>Purpose</b>	<b>From</b>	<b>To</b>
Contractor's Progress Report	Monthly	EMP Implementation Progress	Contractor	PIU
EMP Monitoring	Quarterly	EMP monitoring parameters	Design and construction supervision company	PIU
Environmental Monitoring Report	Annual	Full Implementation and Adherence to Environmental Covenants/Conditions	PIU/EA	ADB/MET
Environmental completion Report (with attachment of copies of relevant environmental inspection reports and copies of environmental acceptance issued by government)	Three month after construction completion	Final evaluation and assessment of EMP implementation	PIU/EA	ADB

## **F. Mechanisms for Feedback and Adjustment**

8. Once the DEIA is approved, the PIU with support of the LIEC will assess the need of EMP revision. After consultation and endorsement from ADB, EMP will be revised to reflect additional requirements from the approved DEIA, if any.

9. Based on environmental monitoring and reporting systems in place, the PIU shall assess whether further mitigation measures are required as corrective action, or improvement in environmental management practices are required. The effectiveness of mitigation measures and monitoring plans will be evaluated by a feedback reporting system. The PIU Environment Officer, with support from the LIEC will play a critical role in the feedback and adjustment mechanism. If the PIU identifies a substantial deviation from the EMP, or if any changes are made to the project scope that may cause significant adverse environmental impacts or increase the number of affected people, then the PIU shall immediately consult MET and ADB to get approval and identify EMP adjustment requirements.

## ENVIRONMENTAL MONITORING INTERVIEW FORM

<b>Date of Interview:</b>		<b>Interviewer Name:</b>	
<b>Interview Site:</b> <i>Where is the interview held? In school, on the road, in shop</i>		<b>Stakeholder Name &amp; Status:</b> <i>Full name, status is business owner, school teacher, religious leader, resident</i>	
<b>Construction Site &amp; Date Construction Started</b> <i>Which road, GPS location if available</i>		<b>Has this stakeholder been interviewed before?</b> <i>Yes (when were they interviewed) No</i>	
<b>Interview Discussion Points</b>			
<b>1. Noise</b>		<b>Record of Discussion</b>	
<b>Before the project started, was the person disturbed by noise? If yes, explain how and when.</b> <i>Where did the noise come from? E.g. traffic, machinery, people, music When did it disturb the person? E.g. all day, at night, intermittently</i>			
<b>During the construction, is the person disturbed by noise from the project? If yes, explain how and when.</b> <i>What type of noise and where did the noise come from? E.g. increased traffic congestion, construction machinery, construction workers etc When did it disturb the person? E.g. all day, at night, intermittently</i>			
<b>If noise from construction is a problem, what changes does the person suggest are made?</b>			
<b>2. Air Quality</b>		<b>Record of Discussion</b>	
<b>Before the project started, was the person affected by air pollution or dust? If yes, explain how and when.</b> <i>Where did the pollution or dust come from? E.g. traffic, machinery, construction, burning garbage, cooking stoves When was the dust or pollution a problem? E.g. all day, at night, intermittently</i>			

<p><b>During the project, is the person disturbed by dust or pollution? If yes, explain how and when.</b></p> <p><i>What type of noise and where did the noise come from? E.g. increased traffic congestion, construction machinery, construction workers, burning construction garbage etc</i></p> <p><i>When did it disturb the person? E.g. all day, at night, intermittently</i></p>	
<p><b>If dust or air pollution from the construction is a problem, what changes does the person suggest are made?</b></p>	
<p><b>3. Vegetation</b></p>	<p><b>Record of Discussion</b></p>
<p><b>Before the project started, what was the vegetation like along the road?</b></p> <p><i>E.g. pasture land, trees, shrubs.</i></p>	
<p><b>During the project, has the person found the vegetation situation has changed? If yes, explain how and when.</b></p>	
<p><b>If impact on vegetation is unacceptable, what changes does the person suggest are made?</b></p>	
<p><b>4. Road Safety</b></p>	<p><b>Record of Discussion</b></p>
<p><b>Before the project started, can you describe the road safety situation at the site/school/house etc?</b></p> <p><i>E.g. no problems, some accidents, difficulty crossing the roads</i></p>	
<p><b>During the project, has the person found the road safety situation has changed? If yes, explain how and when.</b></p> <p><i>Slower traffic so easier to cross the roads, construction vehicles are making a crossing harder / easier, more accidents / less accidents</i></p>	
<p><b>If change in road safety is unacceptable, what changes does the person suggest are made?</b></p>	
<p><b>5. Land Use and Access</b></p>	<p><b>Record of Discussion</b></p>
<p><b>During the project, has the person found the access for herders or other land users has changed? If yes, explain how and when</b></p> <p><i>E.g. Change pasture quality, access to pasture on both sides of road</i></p>	
<p><b>If change in land use and access is unacceptable, what changes does the person suggest are made?</b></p>	

6. Other issues	Record of Discussion
<b>Any other issues about the construction sites that the person wants to discuss?</b> <i>E.g. Water / wastewater concerns, Garbage disposal, Other concerns</i>	



### POST CONSTRUCTION ENVIRONMENTAL CONDITION MONITORING FORM

<b>Date of Site Visit :</b>		<b>Name of Monitor:</b>	
<b>Type of Site Check (tick)</b>	<i>Before Construction Ends</i> <input type="checkbox"/>	<i>Post-Construction</i>	<input type="checkbox"/>
<b>Site Observations</b>			
<b>1. Condition of Site</b>		<b>Observations</b>	
<b>Garbage</b> <i>Is there construction waste on the site? What type of waste? Is it hazardous? Where is it?</i>			
<b>Land Condition</b> <i>Is any disturbed land and soil properly contoured? Is it re-planted if re-vegetation is needed?</i>			
<b>Contamination</b> <i>Is any land or water at the site contaminated, with chemicals, garbage etc? Are any chemicals spills including fuel, visible?</i>			
<b>Services &amp; Infrastructure</b> <i>Are any services damaged because of the construction? Are drains and culverts blocked or clean? Any damage to buildings, lighting, street signs etc ?</i>			
<b>Community Health &amp; Safety</b> <i>Will the site cause a health and safety risk to the community? Are there trenches or pits? Are there other hazards which may impact on health?</i>			
<b>Other Issues</b>			
<b>Requirements for Contractor</b>			
<b>Issue</b> <i>List Issues and observations that the contractor is required to fix</i>			
<b>Date Requirements Given to Contractor</b>			
<b>Date by Which Contractor Agrees to Fix Issues</b>			

## GRM COMPLAINT FORM

<b>PIU Staff Responsible:</b> (name and role)	
<b>Date:</b> (of this record)	
<b>Date of Complaint:</b>	
<b>Date Resolution Required by</b> (17 days from initial complaint):	
<b>Complaint Made by:</b> (Name & Contact Details)	
<b>Method of Complaint:</b> (direct to PIU, via Contractor, Via Bagh or soum)	
<b>Details of Complaint:</b> (issues, actions taken so far, when did it start – all details needed)	
<b>PIU Actions:</b> (Next steps for PIU to resolve the issue or to move complaint to next level)	
<b>Follow Up Actions Needed and Date:</b> (PIU to follow up on resolution if needed, e.g. check contractor actions, or escalate to next level)	