

# Environmental Assessment and Review Framework

February 2012

## MON: Urban Transport Development Investment Program (MFF)

Prepared by the Municipal Government of Ulaanbaatar for the Asian Development Bank

## **CURRENCY EQUIVALENTS**

(as of 30 December 2011)

Currency unit	–	Mongolian Tughrik (MNT)
MNT1.00	=	\$0.00072
\$1.00	=	MNT1,391.50

## **ABBREVIATIONS**

ADB	-	Asian Development Bank
CSC	-	Construction Supervision Companies
EA	-	Executing Agency
EARF	-	Environmental Assessment and Review Framework
EHSMP	-	Environmental, Health and Safety Management Plan
EHSO	-	Environment, Health and Safety Officers
EIA	-	Environmental Impact Assessment
EIRR	-	Economic Internal Rate of Return
EMP	-	Environmental Management Plan
GRM	-	Grievance Redress Mechanism
IA	-	Implementing Agency
IEE	-	Initial Environmental Examination
LIEC	-	Loan Implementation Environmental Consultants
MNET	-	Ministry of Nature Environment and Tourism
NGO	-	Non Governmental Organization
PM	-	Particulate Matter
PSC	-	Project Steering Committee
REA	-	Rapid Environmental Assessment
SU	-	Safeguards Unit
TOR	-	Terms of Reference

## **WEIGHTS AND MEASURES**

%	-	Percentage
dB(A)	-	Decibel (weighted average)
km	-	kilometer
km <sup>2</sup>	-	square kilometer
m	-	meter

## **NOTES**

In this report, "\$" refers to US dollars.

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## I. INTRODUCTION

### A. Background

1. The Urban Transport Development Investment Program (the Program) is a multi-tranche financing facility (MFF) in Ulaanbaatar, Mongolia. The Program proponent and executing agency is the Municipality of Ulaanbaatar (MUB). The investment program aims to (i) improve road infrastructure bottlenecks to maximize the road network capacity; (ii) apply traffic management measures to increase traffic flow efficiency and safety; (iii) develop and implement parking, traffic, and travel demand management policies; (iv) develop a Bus Rapid Transit (BRT) based public transport system; and (v) improve the public transport management and quality of services.

2. The Program is implemented in the context of a number of issues in Ulaanbaatar:

- (i) **Rapid urbanization and increased travel demand.** Since the mid-1990s, Mongolia has experienced intensive urbanization and a high growth rate in the urban population. In Ulaanbaatar, the majority of urban migrants settle in ger areas, increasing travel demands in these areas.
- (ii) **Increasing number of vehicles.** Around 35,000 vehicles per year are added to the Ulaanbaatar private vehicle pool, representing an annual increase of over 25%. The majority of the vehicles are causing congestion and emission problems in an already congested city.
- (iii) **Poor transport infrastructure and services.** Transport infrastructure and services in Ulaanbaatar are suffering from increasing road congestion, inefficient traffic management, poor safety conditions, and a weak public transport system.
- (iv) **High traffic accident incidence.** Ulaanbaatar has a range of serious road traffic safety problems. The World Health Organization estimates that Mongolia has the 18th worst traffic accident incidence in the world.
- (v) **Poor pedestrian safety.** The main issues include: (i) unpaved or poorly paved sidewalks; (ii) poor and infrequent pedestrian crossings; (iii) lack of pedestrian protection facilities to segregate pedestrians from vehicles.
- (vi) **Inadequate public transport services.** The public transport system in Ulaanbaatar is struggling with service quality, technical, financial, and institutional challenges. Public transport services lag behind the recent urban growth and majority of buses are more than 10 years old.
- (vii) **Increased air pollution.** Air pollution in Ulaanbaatar has been increasing to surpass standard levels with the adverse effect on the population's health and well-being as well as environmental balance.
- (viii) **Poverty-Transport Nexus.** The road network in the ger areas, where many low income families live, is poorly maintained. Poor primary feeder roads and un-surfaced connector roads represent a barrier for provision of public transport services.

3. In response to these issues the MFF will be implemented in 3 Tranches over a 10-year period and is expected to be completed by 2021.

4. **Tranche 1** (\$69.9 million, ADB loan - \$59.9 million) will (i) widen Peace Bridge with two dedicated BRT lanes; (ii) upgrade 7.7 km of a roads allocated for the North-South BRT corridor; (iii) rehabilitate electric trolleybus infrastructure along the North-South BRT corridor (14 km); (iv) prepare the North-South BRT corridor; (v) introduce an intelligent transport system (ITS); (vi) promote capacity building and skills transfer; and (vii) provide resources for project management, detailed engineering design, and institutional development. In addition, ADB plans to prepare and provide technical assistance to help MUB (i) develop a performance based contract for BRT operation; (ii) develop a clean transport policy and investment program for Ulaanbaatar, improve vehicle emission standards, and procure and install emission control equipment; and (iii) improve public transport management capacity of the Public Transport Department (PTD).

5. **Tranche 2** (\$98.0 million, ADB loan—\$78.0 million) will (i) expand the BRT infrastructure and services, including extension of the BRT corridors (27.9 km) and installation of trolleybus infrastructure (electric wires, feeder cables and substations) in the North-South, East-West and ring road corridors (11.1 km) (ii) upgrade bus depots; (iii) procure BRT buses and trolleybuses; (iv) implement traffic management and pedestrian safety program, which will include improving geometry and pedestrian facilities of 10 urban road intersections; (v) install ITS components: bus information system (BIS) and smart-card ticketing system (1<sup>st</sup> phase); and (vi) provide resources for institutional development, detailed engineering design, and project management.

6. **Tranche 3** (\$98.0 million, ADB loan—\$78.0 million) will (i) expand BRT infrastructure, including completing 7.7 km of urban road improvement required for BRT; (ii) installation of trolleybus infrastructure (electric wires, feeder cables, and substations) in the East-West corridor; (iii) extend the BRT system, including extension of the East-West BRT corridor (20.4 km); (iv) construct BRT bus depots and a bus-rail intermodal hub; (v) procurement of BRT buses and trolleybuses, (vi) expand ITS components: BIS and smart-card ticketing system (2<sup>nd</sup> phase); and (vii) provide resources for project management, detailed engineering design and institutional development.

**Table 1: Summary of MFF tranches and sub-projects**

<b>MFF Tranche</b>	<b>Sub-projects</b>	<b>Indicative costs \$ million</b>	<b>Timeframe</b>
Tranche 1	Widen Peace Bridge Road improvements along N-S BRT corridor (7.7 km) Improve electric trolleybus infrastructure along N-S corridor (14 km) Prepare the North-South BRT corridor (14 km) Introduce an intelligent transport system (ITS) Promote capacity building and skills transfer Project management, detailed engineering design, and institutional development	\$69.9, ADB loan - \$59.9	2012-2016
Tranche 2	BRT corridor extension (27.9 km) Improve electric trolleybus infrastructure N-S, E-W and ring road corridors (11.1 km) Upgrade bus depots Procure BRT buses and trolleybuses Implement traffic management and pedestrian safety program Improve 10 urban road intersections Install ITS components (1 <sup>st</sup> Phase) institutional development, detailed engineering design, and project	\$98.0, ADB loan - \$78.0	2014 -2016



	management		
Tranche 3	Urban road improvement required for BRT (7.7 km) Electric trolleybus infrastructure E-W corridor Extend E-W BRT corridor (20.4 km) Construct BRT bus depots and a bus-rail intermodal hub; Procure BRT buses and trolleybuses Expand ITS components (2nd phase) Project management, detailed engineering design and institutional development	\$98.0, ADB loan - \$78.0	2016 - 2019

## B. Purpose of the EARF

7. Consistent with ADB's Safeguard Policy Statement (SPS 2009), this Environmental Assessment and Review Framework (EARF) shall apply to all tranche subprojects to be prepared after MFF approval. Tranche 1 of the MFF was categorized -B" for environment, and an Initial Environmental Examination (IEE) has been prepared, which will be approved together with the MFF. As such, this EARF shall be applied to Tranche 2 and 3 subprojects and other components to be prepared after the MFF is approved.

8. This EARF has been developed and agreed with MUB to ensure that the Program complies with the provisions of ADB's SPS 2009 and the Mongolian Law on Environmental Impact Assessment (1998, amended in 2002). The EARF provisions shall guide MUB in the selection, screening and categorization, environmental assessment, and preparation and implementation of safeguard plans (such as an environmental management plan or EMP) of Tranche 2 and 3 subprojects. The preparation of environmental assessment documents shall follow the procedures outlined in this EARF. Since the environmental assessment reports and environmental management plans to be prepared for subsequent tranches are the Borrower's documents, these documents shall be officially endorsed by MUB and submitted to ADB.

9. This EARF (i) describes the Program and its tranches; (ii) explains the general anticipated environmental impacts of the tranches to be financed under the proposed Program; (iii) specifies the requirements that will be followed related to screening and categorization of sub-sequent tranches, assessment, and planning, including meaningful consultation with affected people and other stakeholders and information disclosure requirements; (iv) specifies the environmental safeguard criteria that are to be used in selecting/rejecting subprojects and/or components under sub-sequent tranches; (v) assesses the adequacy of the borrower's capacity to implement national laws and ADB's requirements and identifies needs for capacity building; (vi) specifies EARF implementation procedures, including the budget, institutional arrangements, and capacity development requirements; (vii) specifies monitoring and reporting requirements, and (viii) describes the responsibilities of the EA and of ADB in relation to the preparation, implementation, and progress review of safeguard documents of subsequent tranches.

## II. ASSESSMENT OF LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY

### A. Mongolia's Environmental Policy

10. Mongolia has enacted a comprehensive policy and legal framework for environmental assessment and management. It has policies, legislation and strategies in place to manage the protected estate, to satisfy its international obligations, and to protect the quality of the environment for the health and well-being of its citizens. The hierarchy of policies and legislative provisions for environmental management in Mongolia comprises five layers ranging from the Constitution to international treaties, and to environment and resources protection laws<sup>1</sup>.

11. The main policy documents are the National Environmental Action Plan of 1996, the State Environmental Policy of 1997, the National Plan of Action to Combat Desertification, the Biodiversity Conservation Action Plan, and the National Plan of Action for Protected Areas, all developed under the Ministry of Nature Environment and Tourism (MNET) auspices, as well as the Mongolian Action Program for the 21st Century. The National Environmental Action Plan was updated in 2000 and the National Action Plan for Climate Change was added in the same year. Several program documents (e.g. National Water Program, National Forestry Program, Program of Protection of Air, Environmental Education, Special Protected Areas, and Protection of Ozone Layer) were also completed at the turn of the decade. State policy on Environmental Impact Assessment was in place in 1998. In addition, other guidance documents with important environmental repercussions were developed under the auspices of other ministries and these include the Roads Master Plan, the Power Sector Master Plan, the Tourism Master Plan, and the Renewable Energy Master Plan. Other documents, such as the annual Human Development Reports have increasingly incorporated environmental aspects.

12. A fundamental principle of the Mongolian state environmental policy is that economic development must be in harmony with the extraction and utilization of natural resources and that air, water and soil pollution will be controlled. In April 1996, Mongolia's National Council for Sustainable Development was established to manage and organize activities related to sustainable development in the country. The country's strategy is designed for environmentally friendly, economically stable and socially wealthy development, which emphasizes people as the determining factor for long-term sustainable development.

13. The health of Mongolia's natural ecosystems and populations of wild species is of both national and global importance. The country forms an important part of the global ecosystem in the ecological transition zone in Central Asia, where the great Siberian taiga, the Central Asian steppe, the high Altai Mountains, and the Gobi desert converge. In recognition of its global responsibilities, Mongolia has acceded to a number of international environmental conventions and the key ones are tabulated below (**Table 2**).

14. Each of these conventions places obligations on signatory governments ranging from the provision of a legislative basis for implementation, to adherence to the requirements and conditions of each convention, to monitoring implementation performance on a regular basis, to reporting on a regular basis and to the conference of parties.

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<sup>1</sup> UNDP. 2008. *Institutional Structures for Environmental Management in Mongolia*. Ulaanbaatar and Wellington.

**Table 2: International Environmental Conventions Signed by Mongolia**

<b>Convention</b>	<b>Year of Accession</b>
Stockholm Convention on Persistent Organic Pollutants	2004
Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade	2000
Kyoto Protocol	1999
Convention on the Protection of Wetlands of International Importance (Ramsar)	1998
Convention on the Transboundary Movement of Hazardous Waste (Basel)	1997
UN Convention on Combating Desertification	1996
Vienna Convention for the Protection of the Ozone Layer	1996
Montreal Protocol (regulating substances that deplete the ozone layer)	1996
Convention on International Trade in Endangered Species of Fauna and Flora (CITES)	1996
UN Framework Convention on Climate Change	1994
Convention on Biological Diversity	1993
World Heritage Convention	1990

15. The Government of Mongolia undertook a major environmental law reform in 1990 including the law of land, protected areas, water, forest, wildlife, and native flora resources. The legislation base is extensive as evidenced by the following table of key environmental legislation.

**Table 3: Key Environmental Legislation in Mongolia**

<b>Name of the Law</b>	<b>Year Adopted</b>
The Constitution of Mongolia	1992
Law on Water	2004
Law on Solid Waste	2003
Law of Land	2002
Law on Land Possession	2002
Law on regulation of export and import of endangered species (flora, fauna)	2002
Law on Reinvestment of Natural Resource Use Fees for Conservation	2000
Law on prohibiting export and transportation of Hazardous Waste	2000
Law on Fauna	2000
Law on Land Cadastre and Mapping	1999
Law on Environmental Impact Assessment	1998, 2002
Law on Tourism	1998
Law on Hydrometeorology	1997
Law on Buffer Zones	1997
Law on Mineral Resources	1997, 2006
Law on Land Fees	1997
Law on Prevention of Steppe and Forest Fires	1996
Law on Protection of Plants	1996
Law on Natural Plants	1995
Law on Air	1995
Law on Water and Mineral Water Resource Fee	1995
Law on Protection from Toxic Chemicals	1995
Law on Environmental Protection	1995, 2006, 2008
Law on Forests	1995
Law on Underground Resources	1994

Law on Special Protected Areas	1994
Law on Petroleum	1991

## B. Environmental Safeguard Requirements

16. The Tranches and components pertaining to this EARF are subject to both ADB and National environmental safeguard policies and legislation. This section specifies the ADB requirements and those set out in Mongolian law, which prescribe the principles governing the implementation of all components.

### 1. Environmental Safeguard Requirements of ADB

17. Environmental safeguards requirements, including environmental impact assessment requirements, are defined in ADB's Safeguard Policy Statement (2009). All projects funded by ADB must comply with SPS 2009 to ensure that projects undertaken as part of programs funded under ADB loans are environmentally sound, are designed to operate in compliance with applicable regulatory requirements, and are not likely to cause significant environmental, health, or safety hazards. With respect to the environment, the SPS 2009 is underpinned by the ADB Operations Manual, Bank Policy (OM Section F1/OP, 2010). The policy promotes international good practice as reflected in internationally recognized standards such as the *World Bank Group's Environmental, Health and Safety Guidelines*<sup>2</sup>.

18. ADB's Environmental Safeguards policy principle are defined in SPS (2009), Safeguard Requirements 1, as follows:

- (i) Use a screening process for each proposed project, as early as possible, to determine the appropriate extent and type of environmental assessment so that appropriate studies are undertaken commensurate with the significance of potential impacts and risks.
- (ii) Conduct an environmental assessment for each proposed project to identify potential direct, indirect, cumulative, and induced impacts and risks to physical, biological, socioeconomic (including impacts on livelihood through environmental media, health and safety, vulnerable groups, and gender issues), and physical cultural resources in the context of the project's area of influence. Assess potential transboundary and global impacts, including climate change. Use strategic environmental assessment where appropriate.
- (iii) Examine alternatives to the project's location, design, technology, and components and their potential environmental and social impacts and document the rationale for selecting the particular alternative proposed. Also consider the no project alternative.
- (iv) Avoid, and where avoidance is not possible, minimize, mitigate, and/or offset adverse impacts and enhance positive impacts by means of environmental planning and management. Prepare an environmental management plan (EMP) that includes the proposed mitigation measures, environmental monitoring and reporting requirements, related institutional or organizational arrangements, capacity development and training measures, implementation schedule, cost estimates, and performance indicators. Key considerations for EMP preparation include mitigation of potential adverse impacts to the level of no significant harm to third parties, and the polluter pays principle.

<sup>2</sup> New Version of the "World Bank Group Environmental, Health, and Safety Guidelines", April 30, 2007, Washington, USA. <http://www.ifc.org/ifcext/enviro.nsf/Content/EnvironmentalGuidelines>

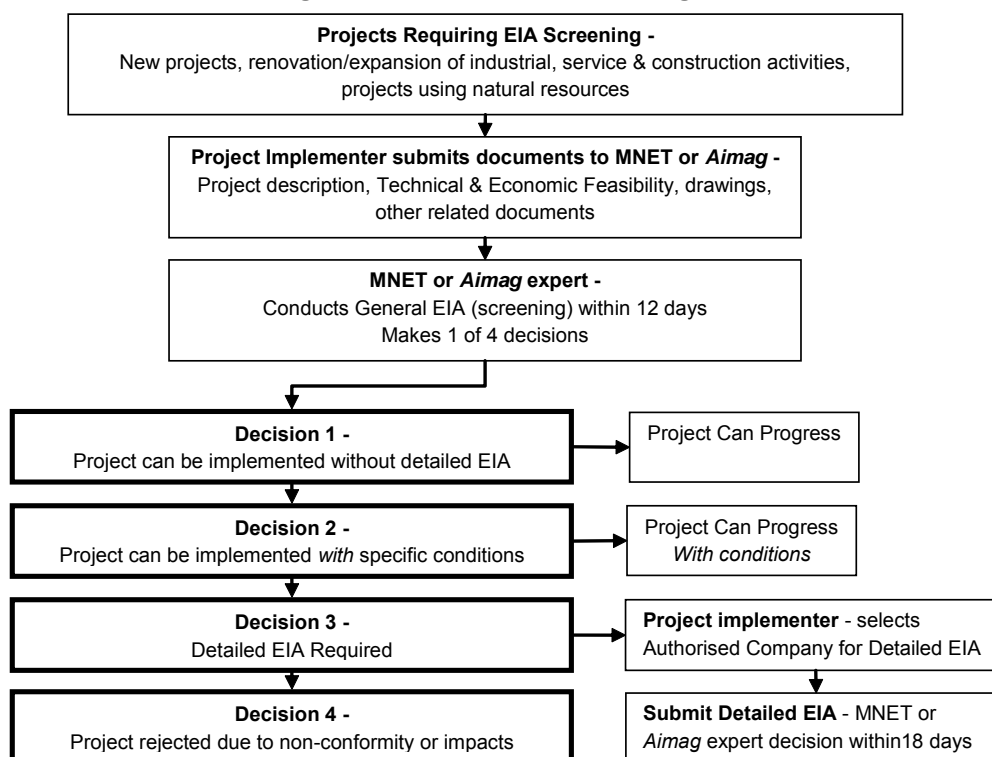
- (v) Carry out meaningful consultation with affected people and facilitate their informed participation. Ensure women's participation in consultation. Involve stakeholders, including affected people and concerned nongovernment organizations, early in the project preparation process and ensure that their views and concerns are made known to and understood by decision makers and taken into account. Continue consultations with stakeholders throughout project implementation as necessary to address issues related to environmental assessment. Establish a grievance redress mechanism to receive and facilitate resolution of the affected people's concerns and grievances regarding the project's environmental performance.
- (vi) Disclose a draft environmental assessment (including the EMP) in a timely manner, before project appraisal, in an accessible place and in a form and language(s) understandable to affected people and other stakeholders. Disclose the final environmental assessment, and its updates if any, to affected people and other stakeholders.
- (vii) Implement the EMP and monitor its effectiveness. Document monitoring results, including the development and implementation of corrective actions, and disclose monitoring reports.
- (viii) Do not implement project activities in areas of critical habitats, unless (i) there are no measurable adverse impacts on the critical habitat that could impair its ability to function, (ii) there is no reduction in the population of any recognized endangered or critically endangered species, and (iii) any lesser impacts are mitigated. If a project is located within a legally protected area, implement additional programs to promote and enhance the conservation aims of the protected area. In an area of natural habitats, there must be no significant conversion or degradation, unless (i) alternatives are not available, (ii) the overall benefits from the project substantially outweigh the environmental costs, and (iii) any conversion or degradation is appropriately mitigated. Use a precautionary approach to the use, development, and management of renewable natural resources.
- (ix) Apply pollution prevention and control technologies and practices consistent with international good practices as reflected in internationally recognized standards such as the World Bank Group's Environmental, Health and Safety Guidelines. Adopt cleaner production processes and good energy efficiency practices. Avoid pollution, or, when avoidance is not possible, minimize or control the intensity or load of pollutant emissions and discharges, including direct and indirect greenhouse gases emissions, waste generation, and release of hazardous materials from their production, transportation, handling, and storage. Avoid the use of hazardous materials subject to international bans or phase-outs. Purchase, use, and manage pesticides based on integrated pest management approaches and reduce reliance on synthetic chemical pesticides.
- (x) Provide workers with safe and healthy working conditions and prevent accidents, injuries, and disease. Establish preventive and emergency preparedness and response measures to avoid, and where avoidance is not possible, to minimize, adverse impacts and risks to the health and safety of local communities.
- (xi) Conserve physical cultural resources and avoid destroying or damaging them by using field-based surveys that employ qualified and experienced experts during environmental assessment. Provide for the use of "enhance find" procedures that include a pre-approved management and conservation approach for materials that may be discovered during project implementation.

## 2. Environmental Assessment Requirements of Mongolia

19. The EIA requirements of Mongolia are regulated by the Law on Environmental Impact Assessment (1998, amended in 2002<sup>3</sup>). The terms of the law apply to all new projects, as well as rehabilitation and expansion of existing industrial, service or construction activities and projects that use natural resources.

20. The purpose of the law is environmental protection, the prevention of ecological imbalance, the regulation of natural resource use, the assessment of environmental impacts of projects and procedures for decision-making regarding the implementation of projects. The EIA process in Mongolia is summarized in Figure 1.

**Figure 1: EIA Process in Mongolia**



Source: Adapted from Vol. 1 (2001) *Compendium of Laws: A Mongolian Citizens Reference Book*

21. The type and size of the planned activity define responsibility as either the Ministry of Nature, Environment and Tourism (MNET) or *Aimag* (provincial) government. There are two types of EIAs defined in the Law:

- (i) **General EIA (screening)** - to initiate a General EIA, the project implementer submits to MNET (or *Aimag* government) a brief description of the project including feasibility study, technical details, drawings, and other information. The General EIA may lead

<sup>3</sup> Law of Mongolia on Environmental Impact Assessments (1998, amended in 2002). Unofficial translation available from <http://cdm-mongolia.com>. The EIA law is currently being redrafted. MNET confirmed that by Spring 2012 a new version of the Law will come into force. However at the time of EARF development, a version of the draft was not available.

to one of four conclusions: (i) no detailed EIA is necessary, (ii) the project may be completed pursuant to specific conditions, (iii) a Detailed EIA is necessary, or (iv) project cancellation. The General EIA is free and usually takes up to 12 days.

- (ii) **Detailed EIA** – the scope is defined by the General EIA. The Detailed EIA report must be produced by a Mongolian company which is authorized by the MNET by means of a special procedure. The developer of the Detailed EIA should submit it to the MNET (or *Aimag* government). An expert of the organization who was involved in conducting General EIA should make a review of the Detailed EIA within 18 days and present it to MNET (or *Aimag* government). Based on the conclusion of the expert, the MNET (or *Aimag* government) takes a decision about approval or disapproval of the project.

22. The Detailed EIA must contain the following chapters: (i) Environmental baseline data; (ii) Project alternatives; (iii) Recommendations for minimizing, mitigation and elimination of impacts; (iv) Analysis of extent and distribution of adverse impacts and their consequences; (v) Risk assessment; (vi) Environmental Protection Plan; (vii) Environmental Monitoring Program; and (viii) Opinions of residents on whether the project should be implemented.

23. During preparation of the IEE for Tranche 1, a General EIA was prepared by MNET, covering all Tranches of the MFF project. MNET concluded that the MFF project the project may be completed pursuant to specific conditions. Therefore General EIAs do not need to be requested from MNET for Tranche 2 or 3 unless there is a major change in project scope. Prior to Tranche 2 and 3 commencement, confirmation should be sought from MNET regarding (i) the duration of the validity of the approved General EIA and (ii) the implications of any changes to project scope, should they occur. **APPENDIX 1** presents the General EIA issued by MNET for the MFF project.

### **C. Institutional Capacity Assessment, Capacity Development Needs**

24. The Ministry of Nature, Environment and Tourism (MNET) is the agency primarily responsible for the implementation of environmental policy in Mongolia. The Department of Environment and Natural Resources under MNET is responsible for the planning and implementation of actions to reduce environmental degradation and adverse environmental impacts, and ensuring the appropriate use of natural resources. Its functions include the conduct of General EIAs and the appraisal and approval of detailed EIAs (refer to para. 21). The Department has extensive experience in conducting General EIAs (i.e. screening and categorization of projects) which comply with the Mongolian Law on Environmental Impact Assessment (1998, amended in 2002), and has either internally or readily accessible expertise to assess full EIAs submitted for approval. Any EIA or IEE prepared as part of this Program would need review and clearance by MNET.

25. The Municipality of Ulaanbaatar (MUB) is the executing agency (EA) of the loan. The EA's function is financial disbursement and due diligence oversight. For this loan, MUB has established a Project Management Unit (PMU) to oversee all the work. An assessment undertaken during the preparation of this EARF and the IEE for Tranche 1 showed that the EA and the IAs (Roads and Public Transport Departments of MUB) lacked expertise and capacities to ensure adequate environmental management of the project. There is a need for institutional strengthening and environmental technical capacity building. For that reason the MUB will establish a Safeguards Unit (SU) within the PMU. The PMU-SU's function will be to assist with

the implementation of all safeguard measures, including coordination of environmental assessment of subsequent tranches, supervision of EMP implementation, environmental progress reporting etc. The PMU-SU will be staffed by one national environment safeguard specialist as well as one or more other safeguard specialists (resettlement, social). The institutional setup for EARF implementation will further be strengthened by (i) appointing experienced and authorized institutes of individual consultants to conduct the environmental assessment of subsequent tranches; (ii) engaging national and international environmental consultants under the loan implementation consultant service to further strengthen the EA's, IAs' and PMU's environmental management and supervision capacities; and (iii) delegate environmental monitoring (including surface water, air quality, noise) to a licensed laboratory. The institutional setup and responsibilities are further defined in Section VII of this EARF.

26. To ensure effective project preparation and implementation of the EARF and subsequent EMPs, the capacity of the PMU, IAs and contractors' staff responsible for EMP implementation and supervision must be strengthened. All parties involved in implementing the EARF and EMPs must have an understanding of the goals, methods, and practices of project environmental management. A training programme has been defined for Tranche 1 of the MFF to meet the capacity development needs of the executing and implementing agencies as well as other stakeholders (see **APPENDIX 2**). A training needs assessment will be conducted during environmental assessment of tranche 2 and 3, and budgeted accordingly.

### **III. ANTICIPATED ENVIRONMENTAL IMPACTS**

#### **A. Overview of subprojects to be assessed and anticipated negative impacts**

27. The types of subprojects to be assessed under subsequent tranches of this MFF relate to construction associated with transport infrastructure that will seek to improve public transport provision in Ulaanbaatar and improve traffic management. Subprojects with potential negative environmental impacts are likely to include (i) urban road improvements, (ii) bus stop and transport hub construction; (iii) road intersection rehabilitation, and (iv) installation of BRT systems.

28. Based on the screening of baseline environmental parameters within the project's area of influence as described in the IEE report for Tranche 1 subprojects, the review of proposed civil works, and stakeholder consultations, the major environmental and social concerns of subprojects to be implemented under Tranche 2 and 3 will relate to the construction phase, which is as expected as (i) these are components implemented in a populated area where there is already traffic and transportation problems, and (ii) the project components are expected to significantly reduce traffic bottlenecks, improve public transport, reduce air pollution and increase traffic safety. The range of operational impacts is expected to be narrower in scope than for construction impacts. The environmental assessment report to be prepared for Tranche 2 and 3 subprojects shall address environmental issues, anticipated negative impacts and risks which include, but are not limited to the following:



29. **Preconstruction Phase:**

- (i) Land acquisition issues for new Right-of-Way (ROW) areas;
- (ii) Compensation issues for other fixed assets and loss of livelihoods (economic displacement);
- (iii) Environmentally sound bridge and culvert design, ensuring adequate discharge capacity.

30. **Construction Phase:**

- (i) Increased soil erosion, landslides and/or siltation from cut and fill operations, including increased risks to downstream rivers;
- (ii) Clearing of right of way, removal of vegetation (such as trees and shrubs, illegal structures etc.) and disposal of spoils;
- (iii) Extraction and transport of construction material from existing quarry sites or borrow pits;
- (iv) Temporary use of land immediately adjacent to the road for siting of contractor's yard, asphalt plant and construction camps;
- (v) Reduced air quality, increased dust, and noise pollution from construction activities, quarry sites, material storage sites, temporary diversion roads, excavations, vehicle and equipment use and asphalt mixing plant, disturbed and uncovered construction areas;
- (vi) Reduced water quality and soil pollution at areas close to project facilities and construction areas from excessive soil erosion, and improper handling and disposal of solid and liquid wastes and materials, including hazardous wastes such as PCBs and asbestos;
- (vii) Drainage from construction camps, material stockpiles, excavations and quarry activities;
- (viii) Interruption to smooth traffic flow, increased traffic congestion and community safety problems;
- (ix) Accidental interruption of other services such as water supply, district heating, electricity or communication on utilities provision;
- (x) Potential impact on flora and fauna, especially on vegetation along the transport corridor;
- (xi) Occupational health and safety, community welfare, and social conflicts due to project activities;
- (xii) Potential damage to physical cultural resources and archaeological sites;

31. **Operation phase:**

- (i) Surface water pollution as a result of excessive discharge of contaminants, sediments and debris accumulating on the road;
- (ii) Temporary increase in traffic accidents involving drivers, pedestrians and other road users needing time to get used to changes in lane priorities, using a BRT system and the pedestrian areas of roads;
- (iii) Induced flood risk as a result of poor maintenance of stormwater drainage and culverts.

32. **Cumulative Impacts.** Cumulative impacts may result when the effects of an action are added to or interact with other effects in a particular place. Cumulative impact assessment therefore looks at the combination of these effects, and any resulting environmental degradation. For construction projects in Ulaanbaatar, cumulative impacts may include cumulative noise and air pollution, cumulative traffic disturbance and related community health and safety. The IEE/EIA should consider the cumulative impacts resulting from other

construction, development or transport related activities which are to be undertaken at the same time as components from this investment program<sup>4</sup>.

33. **Mitigation.** Most construction impacts are temporary, related to the construction process itself, and can be mitigated by relatively straightforward measures that are common practice in urban areas. These include:

- (i) Reducing dust and air pollution by using wheel washes, watering site roads, covering loose material when carried on trucks, covering fuel & chemicals to minimize emissions, and regular air quality monitoring around construction sites;
- (ii) Reducing noise, dust and visual intrusion by retention of existing mature trees and erecting barrier fences around construction sites;
- (iii) Preparing and implementing pollution prevention and abatement plans to reduce risks and accidental spills of toxic materials and to contain and clean up any spills that do occur;
- (iv) Preparing and implementing construction site environmental, health and safety plans to ensure adequate occupational health and safety;
- (v) Preparing and implementing traffic management plans to avoid exacerbating congestion problems and maintain vehicle and pedestrian safety in the vicinity of construction sites;
- (vi) Predict likelihood of service interruption through site surveys. Specify mitigation measures such as: Contractors must assess construction locations in advance for potential disruption to services and identify risks before starting construction; Plan to minimize the disruption and communicate the dates and duration in advance to all affected people if service reduction is unavoidable.
- (vii) Predict likely impacts through consultation and site surveys. Mitigation may be required according to accepted ADB / MUB compensation schemes and ensure the Grievance Redress Mechanism is well publicized.

## **B. Expected environmental benefits**

34. The BRT will have a large positive environmental impact as it fundamentally changes the transport mix of the city, decreases harmful greenhouse gas and CO<sub>2</sub> emissions, due to an increased speed of vehicles, reducing private car travel and the growth of car use, and increasing the use of environmentally efficient public transport.

35. A more effective and efficient public transport route will benefit in particular, poorer city residents, who are not able to afford private vehicles. Increasing the availability of reliable and cost effective transport will improve the poorer residents' access to services and facilities, such as education or health care services, which may otherwise be harder to access. This is particularly relevant to residents in low income housing ger areas, which are increasingly pushed further from the urban centre, where currently public transport provision is poor.

36. The improved pedestrian environment and road safety features (pedestrian crossings) will lead to a reduction in pedestrian accidents; this will be supported by improved enforcement of traffic regulations, giving pedestrians a safer environment in which to cross the road and use

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<sup>4</sup> Including, but not limited to, the ADB supported "Ulaanbaatar Urban Services Development Investment Program" (ADB MON-45007), and the World Bank supported "Third Urban Services Improvement Project".

public transport. The improvements to pavements will also make it easier for people with disabilities to travel to bus stops or replace private transport journeys with walking.

37. The ambient air quality of the city will improve when the BRT is in place, leading to health benefits for the residents. Table 4 gives the predicted reduction in transport emissions harmful to health associated with the Program in comparison to the continuation of present traffic conditions. In addition, the Program will improve the pedestrian and road user environment which is anticipated to reduce the number of accidents associated with using or crossing the roads.

**Table 4: Emissions Reductions due to the BRT Project (tons/year)**

Year	CO <sub>2</sub>	CO	NO <sub>x</sub>	PM
2020	140,000	1,642	711	46,726
2030	185,000	2787	984	63,369

Source: ADB Final Report (November 2010) Urban Transport Development Project Mongolia.

## **IV. ENVIRONMENTAL ASSESSMENT FOR SUBSEQUENT TRANCHES**

### **A. Environmental Criteria for Subproject Selection**

38. Proposed subprojects under subsequent tranches must be in line with the approved road map of the investment program, as defined in Table 1. The environmental criteria for selecting subprojects other than the ones defined in Table 1 include the following:

- (i) Proposed subprojects must comply with Mongolian environmental legislation and ADB's SPS 2009;
- (ii) Proposed subprojects must not include prohibited activities as defined in Annex 5 of ADB's SPS 2009;
- (iii) Proposed subprojects must have potential environmental benefits;
- (iv) Proposed subprojects must improve road conditions and the road network, improve connectivity and travel conditions, promote public and non-motorized transport, reduce greenhouse gas emissions and contribute to climate change mitigation, and ensure safety and convenience of pedestrians;
- (v) Proposed subprojects must avoid negative impacts on sensitive areas and habitats such as water-gathering grounds, nature conservation areas, protected ecological habitats, and physical cultural resources;

### **B. Procedure for environmental assessment of subsequent tranches and subprojects**

39. The environmental assessment requirements to be followed for Tranche 2 and 3 subprojects as well as components to be prepared after MFF approval shall be in accordance with ADB's SPS 2009, with careful consideration of, and compliance with, Mongolian legislation and standards MUB as the project proponent and executive agency has the overall responsibility for environmental assessment of subsequent tranches. When Mongolian regulations differ from the levels and measures prescribed in internationally recognized

standards such as the World Bank Group's *Environment, Health and Safety Guidelines*, MUB will achieve whichever is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, MUB will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented in this document.

40. **Appendix 1 of ADB's SPS 2009** outlines the requirements that borrowers/clients should meet when delivering environmental safeguards for projects supported by ADB. It discusses the objectives and scope of application, and underscores the requirements for undertaking the environmental assessment process. It also includes particular environmental safeguard requirements pertaining to biodiversity conservation and sustainable management of natural resources, pollution prevention and abatement, occupational and community health and safety, and conservation of physical cultural resources.

41. The environmental assessment process shall be initiated before completion of the feasibility study. This is because the EIA relies on the information provided in the feasibility study report. An overlap between feasibility study and environmental assessment is encouraged to allow environmental aspects, design specifications and mitigation measures to be considered in the project design.

#### **STEP 1: Screening and Classification of Subsequent Tranches**

42. **ADB environmental categorization.** Environmental categorization shall be determined by the PMU-SU and approved by ADB and shall follow the procedure prescribed in this EARF. It shall be made at the level of individual financing tranche. Categorization shall follow ADB's SPS 2009 and shall be based on the environmentally most sensitive subproject for financing under each tranche (e.g. if one of the subprojects proposed for funding under a tranche has potential for significant adverse impacts and is classified as Category A, the entire tranche will be classified as Category A). ADB's Rapid Environmental Assessment (REA) checklist (see **APPENDIX 3**) shall be used for determining environmental categorization of tranche 2 and 3, respectively. The REA checklist shall be completed based on project site visits, discussions with local environmental protection authorities and other relevant stakeholders. The PMU-SU, with the support of the loan implementation environmental consultants (LIEC) and ADB's Operational Department, will prepare the REA Checklist, and submit it to ADB for review and approval.

43. Based on ADB's classification system and the submitted REA, ADB will assign the tranche to one of the following categories:

- (i) **Category A.** A proposed project is classified as category A and a full EIA (environmental impact assessment) is required if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works.
- (ii) **Category B.** A proposed project is classified as category B and an IEE (initial environmental examination) is required if its potential adverse environmental impacts are less adverse than those of category A projects. These impacts are site specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects.
- (iii) **Category C.** A proposed project is classified as category C if it is likely to have minimal or no adverse environmental impacts. No environmental assessment is required although environmental implications need to be reviewed.

44. Subprojects involving training, capacity building or purchase of equipment usually do not involve any significant impacts and are classified as Category C. Such subprojects still require a short report (or a section in the EIA or IEE prepared for subsequent tranches) justifying their classification and why no impacts are predicted.

45. **MNET environmental categorization.** The Mongolian environmental assessment process requires project screening, known as the General EIA. This is undertaken by MNET and usually takes 15-20 days. The screening is done on the basis of an official request submitted by the project proponent (MUB) to MNET. The PMU shall submit the request to MNET for conducting the General EIA at the same time as the ADB categorization request. The LIEC shall support the PMU in preparing the documentation to be submitted to MNET.

46. MNET has confirmed that the following documents are required in order for a General EIA to be undertaken for this MFF project. During preparation of the IEE for Tranche 1, a General EIA was prepared by MNET, covering all Tranches of the MFF project. MNET concluded that the MFF project may be completed pursuant to specific conditions. Therefore General EIAs do not need to be requested from MNET for Tranche 2 or 3 unless there is a major change in project scope. Prior to Tranche 2 and 3 commencement, confirmation should be sought from MNET regarding (i) the duration of the validity of the approved General EIA and (ii) the implications of any changes to project scope, should they occur. **APPENDIX 1** presents the General EIA issued by MNET for the MFF project. Should MNET conclude that a General EIA is also required for Tranche 2 and 3, then the following documents should be submitted to MNET:

- (i) Official letter from the Municipality of Ulaanbaatar (MUB) as the project proponents;
- (ii) Project location description and location map;
- (iii) Land management plan if changes are made to land use and required land permissions;
- (iv) General information about the project including technologies used;
- (v) Copy of relevant certificates of the organization (s) involved;
- (vi) Approved technical and economical study (final version approved by ADB and MUB);  
and
- (vii) Contact details of the relevant organizations.

47. If the project/component categorization differs when using ADB and MNET procedure/requirements, the stricter category applies. In any case the borrower's environmental assessment report should be responsive in form and substance with ADB's SPS 2009. See paragraph 23 regarding submission of EIA to MNET for future tranches of the Project.

## **STEP 2: Scoping and Field Work Preparation**

48. **Scoping.** Before conducting the environmental assessment involving category A or B projects, a scoping exercise is recommended. MUB shall liaise with ADB's Regional Department to determine the specific requirements for environmental assessment of subsequent tranches. The scoping exercise shall define the project's area of influence, i.e. the geographic boundary to be used to define impacts, potentially affected people, mitigation measures, monitoring tasks, the scope of public consultation and the eligibility range of the Grievance Redress Mechanism (GRM). Scoping is usually undertaken as part of the General EIA according to National legislation.

49. **TOR and selection of EIA institute for EIA/IEE.** With the screening and scoping completed, yielding a project classification and boundary, the planning of the field program is the next important task. The selection of the right EIA institute or individual specialists to conduct the environmental assessment and prepare the EIA/IEE report is of utmost importance. The degree of detail required by ADB in the EIA/IEE is higher than standard Mongolian requirements. For this reason, an organization with internationally-funded project experience must be engaged. MUB will draft and share with ADB the TOR for the environmental assessment, and seek ADB's approval prior to engaging an EIA institute or individual consultants. Template TORs are presented in **APPENDIX 4** of this EARF.

### **3. Preparation of Environmental Assessment Report (EIA/IEE)**

50. Depending on the project categorization approved by ADB, either an EIA (for category A) or an IEE (for category B) shall be prepared by the appointed EIA institute or individual consultants on behalf of MUB for subsequent tranches. The EIA/IEE shall be prepared for the entire tranche (which will include more than one component, and information for each component needs to be provided). The EIA/IEE shall be prepared in English and Mongolian. In case the domestic screening and scoping process (General EIA) concludes that a full EIA under Mongolian EIA law must be prepared, then the Mongolian IEE/EIA must be approved by MNET. The environmental assessment shall (i) be consistent with Appendix 1 (Safeguard Requirements 1: Environment) and Annex to Appendix 1 (Outline of an Environmental Impact Assessment Report) of ADB's SPS 2009, (ii) be consistent with the MON Law on Environmental Impact Assessment; and (iii) comply with the requirements defined in the General EIA.

51. A more detailed outline of an EIA/IEE including scope of work for the environmental assessment is presented in **APPENDIX 5** of this EARF. The IEE prepared for the first tranche of the MFF shall be used as guidance (available from [www.adb.org](http://www.adb.org)).

52. The English language IEE/EIA must be submitted to ADB for approval, prior to ADB's approval of the periodic financing request for Tranche 2 and 3, respectively. The detailed Mongolian EIA, if required, must be approved by MNET before ADB can approve the English IEE/EIA.

53. **STEP 3: Reviewing environment performance of preceding tranches.** The environment assessment shall start with a critical and comprehensive review of the environmental performance of preceding tranches. The EA, with the support of the environment consultants, shall assess compliance with mitigation measures and monitoring plans defined in the EMP, identify weaknesses in EMP implementation, suggest corrective actions for subsequent tranches, and incorporate in the present environment assessment, if applicable. The environmental performance of preceding tranches shall be documented in the IEE/EIA.

54. **STEP 4: Defining baseline conditions.** Establishing the baseline conditions for environmental media likely to be affected by the project components must be completed with a thorough review of existing information, site visits, stakeholder consultation, and the collection of any available and relevant databases, such as topography, soils, geology, protected areas, sensitive areas and receptors, land use, and all ambient air, noise and water quality conditions in the project's area of influence. For category A project components, primary baseline data must be acquired through environmental monitoring to establish an accurate environmental baseline. Monitoring locations should be selected at representative sensitive targets identified in the site visit. Routine monitoring data from the local environmental monitoring station can be used as a substitute. However, such data must be collected from locations relevant to the Program and must have been collected less than 12 months ago.

55. **STEP 5: Predicting environmental impacts.** This step involves predicting environmental risks and anticipated impacts as a result of major construction activities and operation of the roads, bridge and underpasses, intersections and BRT lines, by relating cause with effect such as changes to traffic volume, impacts on air and surface water quality, noise, risks to occupational and community health and safety, protected and sensitive ecological, socio-economic and cultural resources.

56. **STEP 6: Consultation and participation, GRM and information dissemination.** ADB requires at least two rounds of consultation for Category A projects, and at least 1 round for Category B projects. For Category A tranches, the first round should be conducted at EIA inception. The purpose of the first round is to describe the project to the stakeholders and to solicit their views, concerns, and suggestions so that these could be adequately considered in the EIA study. It should be conducted as soon as the EIA study is started. This step also includes the definition of a project level grievance redress mechanism (GRM). More details on public consultation and information dissemination/disclosure are provided in Chapter V.

57. **STEP 7: Preparation of environmental management plan (EMP).** The EIA institute contracted by the EA will prepare an environmental management plan that addresses the potential impacts and risks identified by the environmental assessment. The EMP must include (i) the proposed mitigation measures, (ii) environmental monitoring and reporting requirements, (iii) emergency response procedures, (iv) institutional or organizational arrangements, and (iv) additional capacity development and training measures if needed. The EMP must define implementation schedule, costs estimates, and performance indicators and targets for all mitigation measures that can be tracked over defined periods. Specifically, the EMP must define the following:

- (i) **Mitigation measures table in the EMP.** The EMP should include a table listing the implementation of the mitigation measures. A template is provided in **APPENDIX 6** of this EARF. All mitigation measures mentioned in the EIA report should be listed in this table. Mitigation measures should be defined for all phases of the project, including (i) detailed design, (ii) construction, and (iii) operation. The table must clearly define responsibilities for implementation and supervision of the mitigation measures.
- (ii) **Environmental monitoring plan.** Based on the results of impact assessment and the locations of sensitive targets such as residential areas, hospitals, schools, rivers, protected heritage sites etc, an environmental monitoring plan must be compiled for the construction and operation phases (at least for the first year of operation). A template is provided in **APPENDIX 7** of this EARF. The plan should be very specific about the

parameters to be monitored, the total number of monitoring locations, the exact locations (location and name of each sensitive target) where monitoring is to be carried out, and the frequency and duration of monitoring. The plan should differentiate between regular internal monitoring and periodic independent, external monitoring (refer to Chapter VI).

- (iii) **Public consultation plan.** The EMP must also define a public consultation plan during construction and operation. Type, frequency, time and costs of public consultation should be defined. Public consultation should also be conducted to discuss and disseminate the project level grievance redress mechanism (GRM see paragraph 65).
- (iv) **Institutional strengthening and training plan** for the EA, the PMU, implementing agencies, contractors and other parties involved in the project must be defined in the EMP. The training plan should be developed based on a training needs assessment (TNA), to be organized by PMU and facilitated by TNA experts, and should include a critical review of training activities implemented under preceding tranches. A sample institutional strengthening and training plan is provided in **APPENDIX 8** of this EARF.
- (v) **Environmental reporting.** The EMP should also define procedures and responsibilities for internal and external environmental progress and compliance reporting. Chapter VI provides guidance on reporting requirements for Category A and B projects.
- (vi) **Environmental management costs.** Cost estimates must be provided for all environmental protection, mitigation and monitoring measures. Costing details must be systematic and include rates and unit costs. A template cost estimate table is provided in **APPENDIX 9** of this EARF.

58. **Step 8: Defining residual project risks and required project assurances.** The EIA/IEE and EMP should define residual project risks and required assurances on the environmental aspects of the project. These assurances will be translated into loan covenants in the loan agreement.

## **V. CONSULTATION, INFORMATION DISCLOSURE, AND GRIEVANCE REDRESS MECHANISM (GRM)**

### **A. Consultation and Participation**

59. In accordance with ADB's SPS 2009, MUB will carry out meaningful consultation with affected people and other concerned stakeholders, including civil society, and facilitate their informed participation. The consultation process shall also be used to introduce and discuss the project grievance redress mechanism (GRM, see paragraph 65). Meaningful consultation is a process that (i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle; (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) is undertaken in an atmosphere free of intimidation or coercion; (iv) is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and



implementation issues. Consultation will be carried out in a manner commensurate with the impacts on affected communities. The consultation process and its results are to be documented and reflected in the environmental assessment report.

60. For Category A projects, at least two rounds of consultation are required, with the active participation of the project team: once during the early stages of EIA field work and once when the draft EIA report is available. For Category B, the EIA institute or EIA specialists mandated by MUB shall conduct at least one public consultation during IEE preparation.

61. The EIA/IEE shall document details of the public consultation by providing details of the environmental issues and concerns raised by stakeholders and by indicating how these will be addressed in the project design and mitigation measures. Proofs of consultations such as attendance sheets, minutes of meetings and pictures shall be included in the documentation. A template of the consultation record is provided in **APPENDIX 10** of this EARF.

62. Consultation related to environment safeguards must continue throughout construction and into the operation phase. During construction, consultation may be undertaken in the forms of formal questionnaire surveys and informal interviews. The consultation should focus on public complaints about community annoyances from construction activities, such as construction noise and dust, as well as public concerns about the environment and resettlement. Immediate adjustments must be undertaken to address any public complaints and concerns. Public consultation must also continue during the first year of operation.

## **B. Information Disclosure**

63. The EA/PMU shall be responsible for ensuring that all environmental assessment documents and environmental monitoring reports are properly and systematically kept as part of the project record. The EA/PMU shall make these documents available in a form, language and at a location in which they can be easily accessed by all stakeholders including affected people.

64. Based on ADB requirements, the following safeguard documents to be prepared and submitted by the EA/PMU shall be posted on ADB's website:

- (i) For environment category A project, draft EIA at least 120 days before the periodic financing request for the respective Tranche is approved by ADB;
- (ii) Final EIA upon receipt replacing the draft EIA;
- (iii) For environmental category B project, final IEE upon receipt;
- (iv) New or updated EIA or IEE reports if prepared to reflect significant changes in the project during design or implementation;
- (v) Corrective action plans prepared during project implementation to address unanticipated environmental impacts and to rectify noncompliance to EMP provisions;
- (vi) Environmental progress reports submitted by the EA/PMU during project implementation upon receipt (semiannually for category A projects, annually for category B projects).

## **C. Grievance Redress Mechanism (GRM)**

65. The EA/PMU shall establish a mechanism to receive and facilitate resolution of affected peoples' concerns, complaints, and grievances about the project's environmental performance.

The grievance redress mechanism will address affected people's concerns and complaints promptly, using an understandable and transparent process that is gender responsive, culturally appropriate, and readily accessible to all segments of the affected people at no costs and without retribution. The mechanism will not impede access to Mongolia's judicial or administrative remedies. The EA/PMU shall assign a team of qualified experts (at least on communication specialist) in charge of coordinating the GRM. The GRM will be discussed through consultation during the design stage and made publicly available and accessible to the APs prior to project implementation.

66. The GRM established for tranche 1 (see **APPENDIX 11**) shall be critically reviewed and updated if needed based on experiences of tranche 1 and the needs and specificities of subsequent tranches. The EIA institute shall support the EA/PMU in (i) critically reviewing experiences of the GRM during tranche 1, (ii) adapting the GRM to the tranches' specificities, (iii) disclosing and discussing the proposed GRM to potentially affected people in the framework of the consultation and information disclosure process, and (iii) documenting the approved GRM in the EIA/IEE, subject to approval by ADB.

## VI. MONITORING AND REPORTING REQUIREMENTS

### A. Monitoring

67. Monitoring is required during all phases of the project, including pre-construction, construction and operation. The preparation and oversight of any monitoring work is the responsibility of the EA.

68. The EA will ensure that the EMP includes a monitoring plan which describes monitoring measures with technical details, including parameters to be measures, methods to be used, sampling locations, frequency of measurements, detection limits and definition of thresholds that will signal the need for corrective actions. The project monitoring program shall focus on the environment within the project's area of influence.

69. **Project readiness monitoring** shall assess the project's readiness with regard to environmental safeguards, and confirm that the pre-requisites are in place before construction commences. The EA and PMU, with the support of the LIEC will conduct a pre-construction monitoring based on the performance indicators defined in **Table 5**. This assessment will demonstrate that environmental commitments are being carried and environmental management systems are in place before construction starts, or suggest corrective actions to ensure that all requirements are met.

**Table 5: Project Readiness Assessment Indicators**

Indicator	Criteria	Assessment	
EIA/IEE approval	<ul style="list-style-type: none"> <li>The EIA/IEE was developed and approved by MNET and ADB, and disclosed on ADB's project website</li> </ul>	Yes	No
EMP update	<ul style="list-style-type: none"> <li>The EMP was updated after detailed design, and approved by ADB and MNET (if relevant)</li> </ul>	Yes	No
Compliance with loan covenants	<ul style="list-style-type: none"> <li>The borrower complies with loan covenants related to project design and environmental management planning</li> </ul>	Yes	No
Public involvement	<ul style="list-style-type: none"> <li>The completion and agreements to resettlement</li> </ul>	Yes	No

Indicator	Criteria	Assessment	
effectiveness	plans before the construction		
	<ul style="list-style-type: none"> <li>• Appropriate rounds of public consultation completed</li> </ul>	Yes	No
	<ul style="list-style-type: none"> <li>• GRM established and discussed with / disseminated to relevant stakeholders</li> </ul>	Yes	No
Environmental Supervision in place	<ul style="list-style-type: none"> <li>• Safeguards Unit established within PMU; ES and IR specialists in place</li> </ul>	Yes	No
Bidding documents and contracts with environmental safeguards	<ul style="list-style-type: none"> <li>• Bidding documents and contracts incorporating the environmental activities and safeguards listed as loan assurances</li> </ul>	Yes	No
	<ul style="list-style-type: none"> <li>• Bidding documents and contracts incorporating the impact mitigation and environmental management provisions of the EMP</li> </ul>	Yes	No
Contractor readiness	<ul style="list-style-type: none"> <li>• Environmental, Health and Safety Management Plan (EHSMP) established for construction sites</li> </ul>	Yes	No
	<ul style="list-style-type: none"> <li>• Environment, Health and Safety Officers appointed</li> </ul>	Yes	No
	<ul style="list-style-type: none"> <li>• Assessment of potential disruption to utilities services conducted</li> </ul>	Yes	No
	<ul style="list-style-type: none"> <li>• Stakeholder interviews to confirm issues if services are disrupted</li> </ul>	Yes	No
	<ul style="list-style-type: none"> <li>• Site condition report for heritage site within project area</li> </ul>	Yes	No
	<ul style="list-style-type: none"> <li>• Required assessments/strategies, such as PCB management, are in place</li> </ul>	Yes	No
EMP financial support	<ul style="list-style-type: none"> <li>• The required funds have been set aside to support the EMP implementation according to the financial plan.</li> </ul>	Yes	No
Baseline Environmental Monitoring	<ul style="list-style-type: none"> <li>• Relevant environmental baseline monitoring conducted prior to construction</li> </ul>	Yes	No

Source: ADB Study Team

70. **Internal supervision and inspection:** Regular and frequent supervision and inspection shall be undertaken by independent Environment, Health and Safety Officers (EHSO) or Construction Supervision Companies (CSC) hired by the Contractor.

71. **Monitoring and supervision by the EA/PMU during construction and operation phase.** The extent of monitoring activities during construction and operation shall be commensurate with the project's risks and impacts:

- (i) For *category C* projects, monitoring may be limited to inspections to verify compliance with EMP avoidance, minimization, mitigation and/or compensation requirements and with relevant laws and regulations;
- (ii) For *category B* projects, in addition to compliance inspections, monitoring shall also involve the sampling and analysis of air, surface water, liquid or solid wastes (e.g. source monitoring) in order to assess their quantity and/or quality against requirements specified in the EMP;
- (iii) For *category A* projects, ambient monitoring to assess the quality of the receiving environment (e.g., air quality, water quality, or noise levels in the project area of

influence) in addition to compliance inspections are required. Ambient monitoring may provide useful feedback on the extent and severity of actual environmental impacts against predicted impacts and relevant ambient standards specified in the EMP. Given the lack of expertise and capacity of the EA and PMU to conduct such monitoring, it shall be undertaken by a licensed laboratory four times per year during construction, and twice during the first year of operation;

72. Monitoring shall also cover significant events or issues encountered during construction; changes in project design and EMP, including corrective actions, if applicable; and compliance with the relevant provisions in the project legal agreement.

73. **External monitoring verification.** For tranches likely to have significant adverse environmental impacts (category A), the borrower/client will retain qualified and experienced external experts or qualified NGOs to verify its monitoring findings. External experts or NGOs are expected to have extensive experience in the design, delivery and quality assurance/quality control aspects of monitoring relevant to the specific design of the project monitoring program. The external experts or NGOs may need to conduct site inspections so as to be able to review and verify with confidence environmental monitoring reports produced by the borrower/client.

## **B. Reporting**

74. **Monthly internal environmental monitoring reports.** The PMU's environmental safeguard unit shall collect environmental monitoring data and reports from the EHSOs or CSCs that are responsible for supervising the contractors' performance, and from the contractors' "red book" (construction site monitoring book). The data shall be incorporated into monthly project progress reports, which will present: (i) project implementation status; (ii) environmental mitigation measures implemented; (iii) monitoring activities; (iv) analysis of monitoring data against relevant standards; (v) violations of environmental regulations; (vi) any additional mitigation measures and corrective actions required; (vii) occupational health and safety reporting (e.g. accidents during construction etc.); (viii) major events or issues that happened during the reporting period and follow-up actions needed; and (ix) complaints received from the public and how these were resolved through the grievance redress mechanism (GRM). These reports will be submitted to the PMU.

75. **Periodic environmental progress reports.** The EA shall prepare periodic monitoring reports that describe progress with implementation of the EMP and compliance issues and corrective actions, if any. The environmental progress and monitoring report should follow the sample outline for a periodic project environmental monitoring report provided in **APPENDIX 12** of this EARF. Depending on the environmental category of the MFF tranche, the following environmental progress and monitoring reports will be provided by the EA to ADB:

- (i) **Category A, construction phase:** (i) semi-annual environmental progress and monitoring reports; and (ii) semi-annual environmental monitoring verification reports. The EA shall contract qualified and experienced external experts or qualified NGOs to verify its semi-annual environmental progress and monitoring reports.
- (ii) **Category A, operation phase:** (i) annual environmental progress and monitoring reports for at least one year and longer if deemed justified by ADB.
- (iii) **Category B:** annual environmental progress and monitoring reports.

76. **Corrective action plans.** If monitoring identifies weakness or deficiencies in the implementation of the EMP, the EA shall develop a corrective action plan. Corrective actions could range from improving technical aspects of mitigation implementation to enhancing the environmental management capacity of implementing agencies. A corrective action plan generally:

- (i) describes corrective actions necessary to address each area of concern;
- (ii) prioritizes these actions;
- (iii) identifies responsibilities for implementation of each corrective action;
- (iv) identifies a time-line for their implementation; and,
- (v) presents a schedule for communicating the results of plan implementation to affected communities and ADB.

## VII. INSTITUTIONAL ARRANGEMENT AND RESPONSIBILITIES

### A. Institutional setup for EARF implementation

77. The following section specifies the responsibilities of the executing agency (EA), the implementing agencies (IAs) the project management unit (PMU), and ADB in relation to the preparation, submission, review, and clearance of environmental assessment reports of subprojects and/or components, as well as EMP implementation, monitoring and supervision, and reporting.

78. **EA and IAs.** The Municipality of Ulaanbaatar (MUB) will be the Executing Agency (EA) for the MFF. MUB will act as the overall administrative authority of all tranches of this MFF. The Road and Public Transport Departments of MUB will be the implementing agencies (IAs) for the Project. MUB will establish a special department that will implement urban development projects financed by international financial institutions (IFIs), including the ADB, JICA, and World Bank.<sup>5</sup> MUB will ensure collaboration with its Environmental Protection department through providing the department a copy of the Project's EMPs following detailed design and allowing time for comment.

79. **Project Steering Committee (PSC).** The EA will form a PSC that will be chaired by the Mayor of Ulaanbaatar, and will comprise representatives of the Ministry of Finance; Ministry of Roads, Transport and Tourism; Ministry of Construction and Urban Development; Chief Architecture; and the city traffic police. The PSC will mainly be responsible for assessing and approving the subsequent components proposed by the EA.;

80. **Project Management Unit (PMU).** The EA and IAs will establish a PMU located within the MUB, which will lead the day-to-day preparation and implementation of the project as a whole. The PMU will have the overall responsibility delegated by the EA to ensure that all subprojects are assessed and implemented in accordance with ADB's SPS 2009. The PMU will include a project manager, procurement specialist, financial specialist, road engineer, and an IT specialist. Under the PMU, a **Safeguards Unit** (covering environmental and social safeguards) will be established. From an environmental perspective, an environmental specialist will have

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<sup>5</sup> The World Bank is financing several urban development projects in the city, including The Second Ulaanbaatar Services Improvement Project (\$22.98 million, 2004) and is preparing The Third Ulaanbaatar Services Improvement Project.

responsibility for day-to-day EARF and EMP implementation and supervision, and provision of reports to the PMU.

81. The responsibilities of the **PMU, on behalf of the EA and IAs**, in carrying out the EARF provisions for Tranche 2 and 3 are as follows:

- (i) Selecting the components of subsequent tranches of the MFF in compliance with the environmental criteria specified in paragraph 38 of this EARF;
- (ii) Classify components by completing rapid environmental assessment for each component using approved REA checklists (**APPENDIX 3** of this EARF) and submitting them to ADB for approval of the environment category;
- (iii) Preparing and submitting to MNET an official request to conduct a General EIA in accordance with the Law on Environmental Impact Assessment (1998, amended in 2002);
- (iv) Preparing terms of reference (TOR) for the environmental assessment, based on the environmental classification of subsequent tranches and components, following the template provided in **APPENDIX 4** of this EARF; submitting draft TOR to ADB for approval;
- (v) Recruiting an EIA institute or consultant team with internationally-funded project experience, in consultation with ADB, to conduct environmental assessment;
- (vi) Ensuring that the environmental assessment reports (EIA or IEE) are prepared in compliance with the requirements of National legislation and ADB's SPS (2009);
- (vii) Ensuring meaningful consultation with affected people and other stakeholders in accordance with ADB's SPS (2009), and Chapter V-A of this EARF;
- (viii) Establishing and maintaining a project level grievance redress mechanism (GRM); appointing a GRM coordinator within the PMU;
- (ix) Organizing training programs, with support of LIECs, covering (a) environmental laws, regulation and policies; (b) implementing mitigation measures; (c) environmental technologies and procurement; (d) operating and maintaining environmental facility; (e) environmental monitoring, supervision; and (f) documentation and reporting;
- (x) Overseeing the review of the environmental assessment report, including (a) submission to MNET for government review and clearance; and (b) submission to ADB for review, approval and disclosure;
- (xi) Ensuring that EMPs prepared during the EIA/IEE are updated during the detailed design phase and shared with ADB for review and approval;
- (xii) Conducting pre-construction monitoring based on performance indicators defined in Table 5 of this EARF;
- (xiii) Ensuring that safeguard requirements as defined in the updated EMPs are incorporated in bidding documents and civil works contracts;
- (xiv) Ensuring that contractors prepare site-specific EMPs and traffic management plans (TMP) before commencement of site works;
- (xv) Investigating the contractors' capacity to address safety issues, communicate expectations of safety performance, and otherwise influence the safety behavior of contractors;
- (xvi) Supervising and monitoring the contractors' performance by way of the Environmental Specifications and Special Environmental Provisions contained in the civil works contract;
- (xvii) Engaging a licensed laboratory to conduct periodic environmental monitoring; ensuring that environmental monitoring is conducted in accordance with the approved EMP;

- (xviii) Preparing and submitting to ADB, periodic monitoring reports during construction (semiannually for category A, annually for category B) that describe progress with implementation of the EMP and compliance issues and corrective actions, if any.
- (xix) For subprojects or components likely to have significant environmental impacts (Category A), engaging qualified and experienced external expert(s) to undertake annual verification of the monitoring information submitted to ADB. Such expert shall not be involved in day-to-day project implementation or supervision nor employed by any firm which has been contracted for the construction phase of the Project.

**82. Asian Development Bank (ADB).** ADB will be responsible for the following:

- (i) Reviewing REA checklists prepared by the EA/PMU and approving the environment category of tranche 2 and 3, respectively;
- (ii) Advising the EA/PMU on the type and extent of environmental assessment report to be prepared, based on the approved categorization and ADB's SPS requirements;
- (iii) Reviewing and approving terms of reference (TOR) for environmental assessment submitted by the EA/PMU;
- (iv) Reviewing and approving the draft EIA or final IEE, disclosing on ADB's project website in accordance with ADB's disclosure policies;
- (v) Reviewing and approving updated EMPs submitted by EA/PMU after detailed design;
- (vi) Reviewing and approving contractors' site-specific EMP before commencement of site works;
- (vii) Ascertaining project readiness based on performance indicators defined in Table 5 of this EARF;
- (viii) Reviewing environmental monitoring reports submitted by the EA, and conducting review missions during implementation to determine compliance with EMP and ADB's SPS (2009);
- (ix) Reviewing environment safeguard performance of preceding tranches, and recommending corrective measures, as required;
- (x) Disclosing environmental monitoring reports on ADB's project website in accordance with ADB's disclosure policies;
- (xi) Reflecting safeguard-related risks and issues of the MFF, and actions being taken to mitigate the risks and resolve the issues, in the consolidated annual reports on the performance of all approved MFFs of the operational department;

**83. Ministry of Nature, Environment and Tourism (MNET).** MNET will be responsible to conduct project screening and scoping (General EIA) in accordance with the Law on Environmental Impact Assessment (1998, amended in 2002), and review and approve full EIAs submitted by the EA, if relevant.

**84. Environmental consultants.** The EA and the PMU do not have the required capacities and authorization to conduct environmental assessments. Environmental impact assessments for Tranche 2 and 3 will be conducted by environmental consultants recruited through the loan. The environmental consultants will prepare EIA/IEE in English and Mongolian that comply with ADB's SPS 2009 and the Mongolian Law on Environmental Impact Assessment. Given the expected scope of tranche 2 and 3, the tranches are likely to be categorized by MNET as not requiring full EIAs.

85. Further institutions involved during project implementation, and their responsibilities, are defined below:

- (i) **Loan implementation consultants.** To ensure proper implementation of approved EMPs, the EA will hire one international and one national environmental consultant under the loan implementation consultancy to further strengthen the EA's, IAs' and PMU's environmental management and supervision capacities, and to ensure compliance with ADB's Safeguard Policy Statement (SPS 2009). An important task of the environmental consultants, in collaboration with the PMU-SU, will be to provide training on environmental management to EA, IA, PMU staff and contractors.
- (ii) **Licensed laboratory.** The EA and PMU also lack capacities to conduct environmental monitoring. For that reason the EA will delegate periodic environmental monitoring (including surface water, air quality, noise) to a licensed laboratory. Several laboratories in Ulaanbaatar have the capacities to conduct environmental monitoring. In addition, if subsequent tranches are categorized A for environment, the EA will appoint an external independent environmental monitor (see para 90).
- (iii) **Contractors.** Unless the IA has inspectors in the field constantly and undertakes the construction-period mitigation and monitoring, the contractor must fill that role. Contractors do often not have such expertise and must either hire staff or a consultant to help implementing all mitigative and supervising tasks defined in the EMP. The contractor is therefore responsible for:
  - i. Confirming the provision of environmental safeguard expertise (independent environment, health and safety officers);
  - ii. Completing the mitigation and monitoring actions as defined in the EMP, by preparing a construction period Environment, Health and Safety Plan (EHSP) including supervision and monitoring plan, and reporting on actions taken on a monthly basis to the PMU;
  - iii. Completing mitigation and monitoring checklist for every construction inspection cycle for inclusion in the semi-annual or annual environment progress and monitoring report.

86. **External environmental experts.** For tranches with potentially significant adverse environmental impacts (category A), the EA will retain qualified and experienced external experts or qualified NGOs to verify its monitoring findings (i.e. verification of the semi-annual environmental progress and monitoring reports). The external experts or NGOs may conduct site inspections to review and verify with confidence project monitoring reports produced by the borrower/client. The EA will bear the costs of the external verification.

## **B. Staffing and Budget for EARF implementation**

87. **Staffing and staffing costs.** For proper implementation of the EARF for tranche 2 and 3, as well as implementation of the resulting EMPs, the institutional setup will be strengthened as defined in paragraphs 80 to 85. Environmental staff required for EARF implementation include:

- (i) one environmental specialist within the PMU Safeguard Unit: 6 person-months per year, or approximately \$10,000 per year; to be covered by the loan; and



- (ii) one international and 1-2 national consultants to conduct environmental assessments (IEE or EIA) and training, or approximately \$38,000 for category B and \$66,000 for category A projects; to be covered by the loan.

88. **Costs for EIA/IEE preparation.** Cost estimates for the conduct of environmental assessments for category B (IEE) and category A (EIA) tranches are presented in **Table 6** and **Table 7**, respectively. These costs will be covered through the loan.

**Table 6: Estimated Cost of IEE Preparation for subsequent tranches of MFF**

Item	Unit Quantity	Unit Cost (US\$)	Total Cost (US\$)
International Environmental Specialist	1.5 Person-months	20,000	30,000
National Environmental Specialist	2 Person-months	4,000	8,000
Data collection, sampling, analysis	Lump sum	3,000	3,000
International travel	1 trip	7,000	7,000
Meaningful consultation	2 consultations	1,500	3,000
Local transportation	Lump sum	1,500	1,500
Communication	2 months	500	1,000
Report production and distribution	Lump sum	1,500	1,500
Contingencies	Lump sum	3,000	3,000
<b>Total</b>			<b>58,000</b>

**Table 7: Estimated Cost of EIA Preparation for subsequent tranches of MFF**

Item	Unit Quantity	Unit Cost (US\$)	Total Cost (US\$)
International Environmental Specialist	2.5 Person-months	20,000	50,000
National EIA Specialist	3 Person-months	4,000	12,000
National environmental specialist	1 person-month	4,000	4,000
Data collection, sampling, analysis	Lump sum	10,000	10,000
International travel	2 trips	5,000	10,000
Meaningful consultation	3 consultations	1,500	4,500
Local transportation	Lump sum	2,000	2,000
Communication	3 months	500	1,500
Report production and distribution	Lump sum	2,000	2,000
Contingencies	Lump sum	5,000	5,000
<b>Total</b>			<b>101,000</b>

89. **Training costs.** Environmental specialists in the PMU, IUs and contractors will receive training in environmental management, environmental monitoring and supervision, mitigation planning, emergency response, and other environmental management techniques. Funding of this training is included in the project budget (component 4, project management and institutional development, approximately \$10,000 US\$ for each tranche). The training will be facilitated by the loan implementation environmental consultant of tranche 1 and the environmental consultants under the PPTA for tranche 2 and 3.

90. **EMP implementation costs.** EMP implementation costs cannot be indicated at this stage, but will need to be carefully estimated during EIA/IEE preparation. The EMP will include a budget for staffing requirements, institutional strengthening and training, implementation of the environmental mitigation measures, internal/compliance monitoring, external monitoring verification, reporting and public consultation, and consultant fees. Environmental management costs are expected to amount 1.5% to 3% of the total estimated project costs for tranches categorized B and A, respectively.

## **VIII. APPENDICES**

- Appendix 1      General EIA approved by MNET
- Appendix 2 -    Training program defined for Tranche 1 of the MFF
- Appendix 3 -    Rapid Environment Assessment Checklist
- Appendix 4 -    Template Terms of Reference for Environmental Impact Assessment
- Appendix 5 -    Detailed Outline of EIA/IEE Report
- Appendix 6 -    Sample Environment Protection and Mitigation Matrix (based on plan developed for Tranche 1 and template for Cat. A projects)
- Appendix 7 -    Template table for Environmental Monitoring Plan (based on plan developed for Tranche 1)
- Appendix 8 -    Template of an Institutional Strengthening and Training Plan (based on plan developed for Tranche 1)
- Appendix 9 -    Template table for environmental management cost estimation
- Appendix 10 -   Template of the consultation process record
- Appendix 11-    Grievance Redress Mechanism (GRM) established for Tranche 1
- Appendix 12 -   Template for semi-annual or annual environmental monitoring and progress report

## **APPENDIX 1 GENERAL EIA APPROVED BY MNET**

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### **Appendix 4 General EIA issued by MNET**

- 1. Scanned copy of the original document (in Mongolian)**
- 2. Unofficial English translation**



**МОНГОЛ УЛСЫН  
БАЙГАЛЬ ОРЧИН,  
АЯЛАЛ ЖУУЛЧЛАЛЫН ЯАМ**

15160 Улаанбаатар хот, Чингэлтэй дүүрэг,  
Нэгдсэн Үндэстний гудамж 5/2, Засгийн газрын II байр,  
Утас: 26-61-71, Факс: (976-51) 26-62-86,  
E-mail: monenv@mail.mn, <http://www.mne.mn>

2011. 11. 26 № 6/4680  
танай \_\_\_\_\_-ны № \_\_\_\_\_-т

**УЛААНБААТАР ХОТЫН  
ЕРӨНХИЙ МЕНЕЖЕР БӨГӨӨД  
ЗАХИРАГЧИЙН АЖЛЫН АЛБАНЫ  
ДАРГА Ч.БАТ ТАНАА**

Улаанбаатар хотын нутагт хэрэгжүүлэх  
“Улаанбаатар хотын тээврийг хөгжүүлэх 76-51MON  
төсөл”-д “Байгаль орчинд нөлөөлөх байдлын  
үнэлгээний тухай” хуулийн дагуу Ерөнхий үнэлгээ  
хийсний үндсэн дээр уг төслийг нөхцөл,  
болзолтойгоор хэрэгжүүлэх боломжтой гэж үзэв.

Ерөнхий үнэлгээний дүгнэлтийг хавсаргав.

ЕРӨНХИЙ ШИНЖЭЭЧ



Д.ЭНХБАТ

**БАЙГАЛЬ ОРЧИН, АЯЛАЛ ЖУУЛЧЛАЛЫН ЯАМ**

**БАЙГАЛЬ ОРЧИНД НӨЛӨӨЛӨХ БАЙДЛЫН  
ЕРӨНХИЙ ҮНЭЛГЭЭНИЙ ДҮГНЭЛТ**

2010 оны 10 дугаар сарын 26-ны өдөр

Улаанбаатар хот

Төслийн дугаар:

2011/H024

**ТӨСЛИЙН ТОВЧ ТОДОРХОЙЛОЛТ**

**Төслийн нэр:** "Улаанбаатар хотын тээврийг хөгжүүлэх төсөл"  
76-51 MON

**Төслийн байршил:** Улаанбаатар хотын нутаг дэвсгэрт.

**Төсөл хэрэгжүүлэгч:** Улаанбаатар хотын Захирагчийн ажлын алба.

**Төсөл хэрэгжүүлэгчийн хаяг:** Улаанбаатар хотын Чингэлтэй дүүрэг,  
Ц.Жигжиджавын гудамж-9, Хангарьд ордон,  
Улаанбаатар хотын ерөнхий менежер бөгөөд  
Захирагчийн ажлын албаны дарга Ч.Бат, утас:  
315347.

**Төслийн товч тодорхойлолт:** Төслийн үндсэн зорилго нь

1. Нийслэлийн замын багтаамжийг нэмэгдүүлэх үүднээс замын дэд бүтэц дэх хүчин чадлын дутагдалтай хэсгүүдийг өргөтгөх
2. Замын хөдөлгөөний аюулгүй байдал, үр ашгийг нэмэгдүүлэх зорилгоор замын хөдөлгөөний зохицуулалтын арга хэмжээнүүдийг авч хэрэгжүүлэх
3. Замын хөдөлгөөн, авто зогсоол, тээврийн эрэлтийг зохицуулах бодлогуудыг боловсруулж, хэрэгжүүлэх
4. Нийтийн тээврийн тусгай замын автобусны систем байгуулах
5. Нийтийн тээврийн зохицуулалт, үйлчилгээний чанарыг сайжруулах зэрэг болно. Тус төсөл нь Улаанбаатар хотын нийтийн тээврийг хөгжүүлэхээс гадна хотын агаарын бохирдлыг бууруулахад хувь нэмэрээ оруулах юм.

Төслийн 1-р үе шатанд (2011-2013 он) (санхүүжилтийн хэмжээ ойролцоогоор 29.9 сая ам.доллар)

- (i) 20 орчим уулзварын геометрийн хэлбэр дүрс, замын хөдөлгөөний хүчин чадлыг сайжруулах;





- (ii) 3 байршилд автобусны буудал сайжруулах;
- (iii) 7.7 км орчим замыг сайжруулах (Энхтайваны гүүрээс Яармагын гүүр, МТ шатахуун түгээгүүрийн газраас Долоон буудалын чиглэлд);
- (iv) ухаалаг тээврийн систем нэвтрүүлэх (цахим тасалбар, GPS систем тулгуурласан автобусны байршил тодорхойлох систем)
- (v) төслийн удирдлага, инженерийн зураг боловсруулах

Төслийн 2-р үе шатанд (2013-2015 он) (санхүүжилтийн хэмжээ ойролцоогоор 78.0 сая ам.доллар)

- (i) Шарга морьт орчмын 10.4 км орчим замыг сайжруулах;
- (ii) Энхтайваны гүүрийг өргөтгөн сайжруулах;
- (iii) ТЗА-ны 1-р шугамыг босоо тэнхлэгийн дагуу ашиглалтад өгөх (22 км);
- (iv) ухаалаг тээврийн системийг өргөтгөх (замын хөдөлгөөний менежмент, хяналтын систем); мөн
- (v) бүтэц зохион байгуулалтыг сайжуулах, төслийн удирдлага, инженерийн зураг төсөл боловсруулах

Төслийн 3-р үе шатанд (2015-2017 он) (санхүүжилтийн хэмжээ ойролцоогоор 78.0 сая ам.доллар)

- (i) Энхтайваны өргөн чөлөөтэй паралель хэвтээ тэнхлэгийн дагуу нийт 20 км орчим замыг сайжруулах;
- (ii) ТЗА-ны 2-р шугамыг ашиглалтад өгөх (замын урт 30 км, Энхтайваны өргөн чөлөөтэй паралел); мөн
- (iii) бүтэц зохион байгуулалтыг сайжуулах, төслийн удирдлага, инженерийн зураг төсөл боловсруулах ажлуудыг хийж гүйцэтгэхээр төлөвлөсөн байна.

### ЕРӨНХИЙ ҮНЭЛГЭЭНИЙ ДҮГНЭЛТ

Улаанбаатар хотын нутагт хэрэгжүүлэх "Улаанбаатар хотын тээврийг хөгжүүлэх 71-56 MON төсөл"-д Монгол Улсын Их Хурлын 1998 оны 1 дүгээр сарын 22-ны өдрийн тогтоолоор баталсан "Байгаль орчинд нөлөөлөх байдлын үнэлгээний тухай" хуулийн дагуу ерөнхий үнэлгээ хийсний үндсэн дээр уг төслийг нөхцөл, болзолтойгоор хэрэгжүүлэх боломжтой гэж үзэв.

### БУСАД АСУУДАЛ

1 Дээрхи төслийг хэрэгжүүлэх үйл ажиллагаа явуулахдаа тухайн орон нутгийн Засаг захиргааны болон Байгаль орчныг хамгаалахтай холбогдсон хууль тогтоомжийг биелүүлэх талаар байгаль орчин, мэргэжлийн хяналтын байгууллагуудтай байнга хамтран ажиллах

2. Мэргэжлийн хяналтын байгууллага, тэдгээрийн ажилтнуудтай байнга хамтран ажиллах

3. Байгаль орчинд нөлөөлөх байдлын ерөнхий үнэлгээний дүгнэлтээр тогтоосон нөхцөл болзол, шаардлагыг цаг хугацаанд нь тогтмол ханган хэрэгжүүлэх, биелэлтийг холбогдох газруудад тогтоосон хугацаанд тайлагнаж байх

4. Ерөнхий үнэлгээний дүгнэлт, ажлын чиглэл, нөхцлөөс өөр үйл ажиллагаа явуулах, төслийн техник, тоног төхөөрөмж, байршил өөрчлөгдөх тохиолдолд Байгаль орчинд нөлөөлөх байдлын ерөнхий үнэлгээнд хамрагдаж дахин шийдвэр гаргуулах

5. Төслийн үйл ажиллагааг явуулахад баримтлах, зайлшгүй мөрддөг олон улсын стандарт, норм норматив, шаардлагыг судалж хэрэгжүүлэх.

5. Байгаль орчинд нөлөөлөх байдлын ерөнхий үнэлгээ хийлгэх асуудлаар төсөл хэрэгжүүлэгч хүсэлт гаргасан (Улаанбаатар хотын ерөнхий менежер бөгөөд Захирагчийн ажлын албаны дарга Ч.Батын 2011 оны 10 дугаар сарын 13-ны өдрийн 1/1131 дугаартай албан бичгээр ирүүлсэн хүсэлт).

ЕРӨНХИЙ ҮНЭЛГЭЭ ХИЙСЭН.

БОАЖЯ-НЫ ШИНЖЭЭЧ

Г.ХОРОЛМАА

Ерөнхий үнэлгээний дүгнэлт болон нөхцөл,

болзлыг зөвшөөрч, хэрэгжүүлэх үүрэг хүлээсэн

Улаанбаатар хотын ерөнхий менежер бөгөөд  
Захирагчийн ажлын албаны дарга

Ч.БАТ



БАЙГАЛЬ ОРЧИН, АЯЛАЛ ЖУУЛЧЛАЛЫН ЯАМ

Улаанбаатар хот

**Байгаль орчинд нөлөөлөх байдлын ерөнхий үнэлгээгээр тогтоосон  
заавал хэрэгжүүлэх шаардлагатай нөхцөл, болзол**

Ажлын агуулга	Хугацаа	Тайлбар
1. Төслийн холбогдох бичиг баримт, зөвшөөрлийг зохих шаардлагын түвшинд боловсруулж, шаардлагатай бичиг баримтыг бүрдүүлэх	Төслийн эхэнд	Төсөл хэрэгжүүлэгч
2. Төслийн үйл ажиллагааг Олон улсын болон Монгол Улсын стандартын дагуу явуулах.	Ажил эхлэхэд	Төсөл хэрэгжүүлэгч
3. Төслийн үйл ажиллагаанаас гарах хог хаягдлыг зориулалтын цэгт хадгалж, тусгай графикайн дагуу, байгаль орчны болон эрүүл ахуй, халдвар судлалын хяналтын байгууллагаас тогтоосон цэгт зайлуулах, хог хаягдал хадгалах газарт ариутгал, халдваргүйжүүлэлт тогтмол хийж байх	Үйл ажиллагааны явцдаа тогтмол	Төсөл хэрэгжүүлэгч
4. Шатах тослох материалын үлдэгдэл хаягдал болон шатах тослох материалыг хадгалах, тээвэрлэх, түгээх, устгах үйл ажиллагааг зохих журмын дагуу зохион байгуулах	Үйл ажиллагааны явцдаа тогтмол	Төсөл хэрэгжүүлэгч
5. Төслийн үйл ажиллагааны явцад хөдөлмөр хамгааллын асуудлыг зохих шаардлагын дагуу шийдвэрлэх	Байнга	Төсөл хэрэгжүүлэгч
5. Байгаль орчныг хамгаалах талаар тусгай төлөвлөгөөг Нийслэлийн Байгаль орчныг хамгаалах газраар батлуулж, биелэлтийг нь тогтоосон хугацаанд тайлагнаж байх	Жил бүр	Төсөл хэрэгжүүлэгч
6. Зам, гүүр, барилга, троллейбусны шугам татах зэрэг ажлын явцад ажилчдын хөдөлмөр хамгааллын асуудлаар байнгын сургалт явуулах. Шугам сүлжээ татах явцад байгаль орчны стандарт шаардлагуудыг хангаж ажиллах талаар Байгаль хамгаалах төлөвлөгөөнд тусгаж ажиллах	Төслийн үйл ажиллагааны турш	Төсөл хэрэгжүүлэгч
7. Хотын нийтийн тээвэрт троллейбусны тоог нэмснээр Улаанбаатар хотын агаарын бохирдлыг хэдий хэмжээгээр бууруулж болох талаар урьдчилсан судалгаа, тайлан гаргаж холбогдох байгууллагуудад хүргүүлэх.	Төслийн эхний шатанд	Төсөл хэрэгжүүлэгч

ЗААВАЛ ХЭРЭГЖҮҮЛЭХ ШААРДЛАГАТАЙ ДЭЭР ДУРДСАН АРГА ХЭМЖЭЭГ  
ЦАГ ХУГАЦААНД НЬ ХАНГАН БИЕЛҮҮЛЭЭГҮЙ ТОХИОЛДОЛД ЕРӨНХИЙ  
ҮНЭЛГЭЭНИЙ ДҮГНЭЛТИЙГ ХҮЧИНГҮЙ БОЛГОЖ, "БАЙГАЛЬ ОРЧИНД НӨЛӨӨЛӨХ  
БАЙДЛЫН ҮНЭЛГЭЭНИЙ ТУХАЙ" ХҮҮЛИЙН ДАГУУ ХАРИУЦЛАГА ТООЦНО.

Ерөнхий үнэлгээний дүгнэлт, заавал хэрэгжүүлэх  
шаардлагатай нөхцөл, болзлыг тогтоосон:

Байгаль орчин, аялал жуулчлалын  
яамны шинжээч

Г.ХОРОЛМАА

Ерөнхий үнэлгээний дүгнэлт болон нөхцөл,  
болзлыг зөвшөөрч, хэрэгжүүлэх үүрэг хүлээсэн

Улаанбаатар хотын ерөнхий менежер бөгөөд  
Захирагчийн ажлын албаны дарга

Ч.БАТ



## General EIA, unofficial English translation

MINISTRY OF NATURE, ENVIRONMENT  
AND TOURISM OF MONGOLIA

Government Building II, United Nations Street 5/2,  
Chingeltey District, 15160 Ulaanbaatar  
Tel: 26-61-71, Fax: (976-51) 26-62-86  
E-mail: [moneny@mail.mn](mailto:moneny@mail.mn), <http://www.mne.mn>

TO: MR. CH.BAT, HEAD OF GOVERNOR'S OFFICE OF CAPITAL CITY  
AND GENERAL MANAGER OF ULAANBAATAR

On the basis of General Assessment, carried out in accordance with the Law on Environmental Impact Assessment of Mongolia, on the Urban Transport Development Project 76-51MON to be implemented in Ulaanbaatar, it is concluded that the project could be implemented on terms and conditions.

The General Assessment Conclusion is attached.

GENERAL EXPERT

D.ENKHBAT

**MINISTRY OF NATURE, ENVIRONMENT AND TOURISM**

**GENERAL ASSESSMENT CONCLUSION ON  
ENVIRONMENTAL IMPACT**

Date: October 26, 2011

Ulaanbaatar

Project number:

2011/H024

**PROJECT OVERVIEW**

**Project title:** “Urban Transport Development Project”  
76-51MON

**Project location:** Territory of Ulaanbaatar

**Project implementer:** Governor’s office of Capital city

**Address of the implementer:** Mr. Ch.Bat, Head of Governor’s office of Capital city and General Manager of Ulaanbaatar, Khangarid Palace  
Ts.Jigjidjav Street, Chingeltey District, Ulaanbaatar  
Tel: 315347

**Project description:** Main goals of the project are:

1. Improve road bottlenecks to maximize the road network capacity;
2. Applying traffic management measures to increase traffic flow efficiency and safety;
3. Develop and implement parking, traffic, and travel demand management policies;
4. Develop a bus-rapid transit-based public transport system;
5. Improve the public transport management and quality of services. This project shall contribute to the development of public transportation as well as to the elimination of air pollution in Ulaanbaatar.

Within the 1<sup>st</sup> Phase (2011-2013) of the Project (approx. investment amount is USD 29.9 million):

1. Geometry and traffic capacity of about 20 intersections shall be improved;
2. Bus stations at three locations shall be improved;
3. About 7.7 km of a road (between the Peace and Yarmag bridges and between MT gas station and Doloon Buudal bus terminal) shall be upgraded;
4. Intelligent transport system (ITS) components (smart-card and GPS-based bus location systems) shall be introduced; and
5. Resources for project management and engineering design shall be provided.

Within the 2<sup>nd</sup> Phase (2013-2015) of the Project (approx. investment amount is USD 78.0 million):

1. About 10.4 km of road infrastructure in Sharga Morit area shall be upgraded;
2. The Peace Bridge shall be extended and upgraded;
3. The 1<sup>st</sup> BRT line along the North-South corridor (22 km) shall be constructed;

4. The ITS system (traffic management and control systems) shall be extended; and
5. Resources for institutional development, project management, and engineering design shall be provided.

Within the 3<sup>rd</sup> Phase (2015-2017) of the Project (approx. investment amount is USD 78.0 million):

1. About 20 km of road infrastructure parallel to the Peace Avenue shall be upgraded;
2. The 2nd BRT line (30 km, parallel to the Peace Avenue) shall be introduced; and
3. Resources for institutional development, project management, and engineering design shall be provided.

### **CONCLUSION ON GENERAL ASSESSMENT**

On the basis of General Assessment, carried out in accordance with the Law on Environmental Impact Assessment of Mongolia, passed by the Parliament Resolution dated January 22, 1998, on the Urban Transport Development Project 76-51MON to be implemented in Ulaanbaatar, it is concluded that the project could be implemented on terms and conditions.

### **MISCELLANEOUS**

1. Regular collaboration with environmental and professional inspection organizations should be extended with regard to realizing related legislations on local administration and environmental protection when implementing the project.
2. Collaboration with professional inspection organization and its staff should be extended.
3. Terms and conditions set by the General assessment on Environmental impact conclusion should be realized and reported to related organizations on time.
4. In case of running different activities and operations other than those reviewed by the General assessment, or changing the project equipments and location, General environmental impact assessment should be requested.
5. International standards, norms, normative and other requirements for running project activities should be followed.
6. The Project implementer has requested the general assessment on environmental impact (Official request No. 1/1131 sent by Mr. Ch.Bat, Head of Governor's office of Capital city and General Manager of Ulaanbaatar, dated October 31, 2011).

General assessment was conducted by:

Expert, Ministry of Nature, Environment  
and Tourism

G.KHOROLMAA

General assessment terms and conditions are  
accepted and to be implemented by:

Head of Governor's office of Capital city and  
General Manager of Ulaanbaatar

CH.BAT

MINISTRY OF NATURE, ENVIRONMENT AND TOURISM

Ulaanbaatar

**Terms and conditions, set up by the General Environmental Impact Assessment  
and to be realized mandatory**

<b>Content</b>	<b>Period</b>	<b>Remarks</b>
1. Related project documents and permissions must be developed at proper level and necessary documents must be obtained	At the beginning of the project	Project implementer
2. Project activities must be in compliance with the international and Mongolian standards	At the commencement	Project implementer
3. Wastes from project operations should be stored at designated points, must be removed to the point, set by the environmental, hygienic and infection control organizations according to special schedule and carry out sanitation and disinfections at waste storage area	Regularly during operations	Project implementer
4. Lubricants and their remnant storage, transport and removal must be organized in accordance with proper procedures	Regularly during operations	Project implementer
5. Occupational safety during project implementation must be addresses in accordance with proper requirements	Regularly	Project implementer
5. Special plan on environmental protection must be approved by the Capital city Environmental Protection organization and its realization must be reported within designated period	Annually	Project implementer
6. Regular training should be provided for the staff during road, bridge, construction and trolleybus line extensions. Environmental protection plan must incorporate clauses on meeting environmental requirements during line and network extensions	During project operations	Project implementer
7. Tentative research and report on how extension of trolleybus numbers could eliminate city air pollution must be formulated and submitted to related organizations.	At the first phase of the project	Project implementer

*IN CASE THESE MANDATORY TERMS AND CONDITIONS ARE NOT REALIZED ON TIME, GENERAL ASSESSMENT CONCLUSION WILL BE INVALIDATED AND LIABILITIES SHALL BE IMPOSED AS STIPULATED IN THE LAW ON ENVIRONMENTAL IMPACT ASSESSMENT.*

General assessment conclusion, mandatory  
terms and conditions are set by:

Expert, Ministry of Nature, Environment  
and Tourism

G.KHOROLMAA

General assessment terms and conditions are  
accepted and to be implemented by:

Head of Governor's office of Capital city and  
General Manager of Ulaanbaatar

CH.BAT



## APPENDIX 2 TRAINING PROGRAM DEFINED FOR TRANCHE 1

1. The EA, PMU, IA and contractors will receive training in environmental management, environmental monitoring and supervision, mitigation planning, emergency response, public consultation and Grievance Redress Mechanism, occupational and community health and safety, and other environmental management techniques. The training topics, methods, and estimated costs for Tranche 1 are described in Table A2-1.

2. Training will mainly be facilitated by the Loan Implementation Environmental Consultants (LIEC). International training specialists will be hired where needed and appropriate. A total budget of \$11,000 was earmarked for training activities related to environmental management during tranche 1.

3. Training format will include workshops and seminars. In particular, due to the prevalence of construction projects in the City, on-site training will be used extensively, giving staff firsthand experience on how to identify and correct adverse environmental impacts. Of particular importance for the project is to build confidence and expertise within the Roads Department, when dealing with contractors who are not adhering to the EMP. Training in this area will need to include the steps taken to address non-compliance and penalties that could be included in project contracts.

**Table A2-1: Training Program**

Training Topic	Targeted Agencies	Timing	Duration, Costs
Environmental Laws and Regulations, Best Environmental Management Practices	IA, PMU, PMU-SU, MNET, MUB-EPD, Contractors, EHSO	Prior to project implementation	1 day, \$1,000
EMP Implementation: Roles and Responsibilities, Monitoring, Supervision and Reporting Procedures	IA, PMU, PMU-SU, MNET, Contractors, EHSO	Prior to and during project implementation	2 x 1 day, \$2,000
Grievance Redress Mechanism: Roles and Responsibilities, Procedures	IA, PPCU, PMU, GRM Access Points, Contractors, EHSO	Prior to project implementation	1 day, \$1,000
Occupational and Community Health and Safety, Emergency Preparedness and Response	Contractors, EHSO, PMU-SU	Prior to and during project implementation	2 x 1 day, \$2,000
Pollution Control and Environmental Monitoring, Inspection and Reporting, Public Consultation	IA, PMU-SU, EHSO, Contractors	Prior to and during project implementation	2x 1 day, \$2,000
Contractor Engagement and Management, including EMP Enforcement	PMU-SU, PMU, IA	Prior to project implementation	1 day, \$1,000
Road safety for vehicles, pedestrians and road users including cyclists, traffic law enforcement	IA, local traffic police	During project implementation	2 days, \$2,000

## APPENDIX 3 RAPID ENVIRONMENTAL ASSESSMENT (REA) CHECKLIST

**Instructions:**

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by the Director, RSES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "Remarks" section to discuss any anticipated mitigation measures.

**Country/Project Title:**

**Sector Division:**


Screening Questions	Yes	No	Remarks
<b>A. Project Siting</b> Is the project area...			
▪ Densely populated?			
▪ Heavy with development activities?			
▪ Adjacent to or within any environmentally sensitive areas?			
• Cultural heritage site			
• Protected Area			
• Wetland			
• Mangrove			
• Estuarine			
• Buffer zone of protected area			
• Special area for protecting biodiversity			
• Bay			
<b>B. Potential Environmental Impacts</b> Will the Project cause...			
▪ impacts on the sustainability of associated sanitation and solid waste disposal systems and their interactions with other urban services.			

### Appendix 3 – Rapid Environmental Assessment Checklist

Screening Questions	Yes	No	Remarks
▪ deterioration of surrounding environmental conditions due to rapid urban population growth, commercial and industrial activity, and increased waste generation to the point that both manmade and natural systems are overloaded and the capacities to manage these systems are overwhelmed?			
▪ degradation of land and ecosystems (e.g. loss of wetlands and wild lands, coastal zones, watersheds and forests)?			
▪ dislocation or involuntary resettlement of people?			
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable group?			
▪ degradation of cultural property, and loss of cultural heritage and tourism revenues?			
▪ occupation of low-lying lands, floodplains and steep hillsides by squatters and low-income groups, and their exposure to increased health hazards and risks due to pollutive industries?			
▪ water resource problems (e.g. depletion/degradation of available water supply, deterioration for surface and ground water quality , and pollution of receiving waters?			
▪ air pollution due to urban emissions?			
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical and biological hazards during project construction and operation?			
▪ road blocking and temporary flooding due to land excavation during rainy season?			
▪ noise and dust from construction activities?			
▪ traffic disturbances due to construction material transport and wastes?			
▪ temporary silt runoff due to construction?			
▪ hazards to public health due to ambient, household and occupational pollution, thermal inversion, and smog formation?			
▪ water depletion and/or degradation?			
▪ overpaying of ground water, leading to land subsidence, lowered ground water table, and salinization?			
▪ contamination of surface and ground waters due to improper waste disposal?			

### Appendix 3 – Rapid Environmental Assessment Checklist

Screening Questions	Yes	No	Remarks
▪ pollution of receiving waters resulting in amenity losses, fisheries and marine resource depletion, and health problems?			
▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ social conflicts if workers from other regions or countries are hired?			
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during operation and construction?			
▪ community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			

Climate Change and Disaster Risk Questions The following questions are not for environmental categorization. They are included in this checklist to help identify potential climate and disaster risks.	Yes	No	Remarks
• Is the Project area subject to hazards such as earthquakes, floods, landslides, tropical cyclone winds, storm surges, tsunami or volcanic eruptions and climate changes (see Annex I)?			
▪ Could changes in temperature, precipitation, or extreme events patterns over the Project lifespan affect technical or financial sustainability (e.g., increased extreme rainfall increases flooding, damaging proposed infrastructure)?			
▪ Are there any demographic or socio-economic aspects of the Project area that are already vulnerable (e.g., high incidence of marginalized populations, rural-urban migrants, illegal settlements, ethnic minorities, women or children)?			
▪ Could the Project potentially increase the climate or disaster vulnerability of the surrounding area (e.g., by paving vulnerable groundwater recharge areas, or using water from a vulnerable source that is relied upon by many user groups, or encouraging settlement in earthquake zones)?			

\* Hazards are potentially damaging physical events.

## Annex I: Environments, Hazards and Climate Changes

Environment	Natural Hazards and Climate Change	Example Impact on Urban Development
<b>Arid/Semi-arid and desert environment</b>	Low erratic rainfall of up to 500 mm rainfall per annum with periodic droughts and high rainfall variability. Low vegetative cover. Resilient ecosystems & complex pastoral and systems, but medium certainty that 10–20% of drylands degraded; 10-30% projected decrease in water availability in next 40 years; projected increase in drought duration and severity under climate change. Increased mobilization of sand dunes and other soils as vegetation cover declines; likely overall decrease in agricultural productivity, with rain-fed agriculture yield reduced by 30% or more by 2020. Earthquakes and other geophysical hazards may also occur in these environments.	Encroachment of sand dunes into urban areas; increased dust and respiratory diseases in peri-urban areas; water and energy shortages in urban areas due to reduced rainfall
<b>Humid and sub-humid plains, foothills and hill country</b>	More than 500 mm precipitation/yr. Resilient ecosystems & complex human pastoral and cropping systems. 10-30% projected decrease in water availability in next 40 years; projected increase in droughts, heatwaves and floods; increased erosion of loess-mantled landscapes by wind and water; increased gully erosion; landslides likely on steeper slopes. Likely overall decrease in agricultural productivity & compromised food production from variability, with rain-fed agriculture yield reduced by 30% or more by 2020. Increased incidence of forest and agriculture-based insect infestations. Earthquakes and other geophysical hazards may also occur in these environments.	Increases in the intensity of precipitation and floods inundate transport infrastructure causing disruptions in traffic and economic activity; increased food insecurity in urban areas as production levels fall and prices rise
<b>River valleys/deltas and estuaries and other low-lying coastal areas</b>	River basins, deltas and estuaries in low-lying areas are vulnerable to riverine floods, storm surges associated with tropical cyclones/typhoons and sea level rise; natural (and human-induced) subsidence resulting from sediment compaction and ground water extraction; liquefaction of soft sediments as result of earthquake ground shaking. Tsunami possible/likely on some coasts. Lowland agri-business and subsistence farming in these regions at significant risk.	Ground subsidence damages and disrupts services such as water supply and sanitation, energy and transport; increases in the intensity of floods can erode solid waste landfills which can result in the contamination of water resources
<b>Small islands</b>	Small islands generally have land areas of less than 10,000km <sup>2</sup> in area, though Papua New Guinea and Timor with much larger land areas are commonly included in lists of small island developing states. Low-lying islands are especially vulnerable to storm surge, tsunami and sea-level rise and, frequently, coastal erosion, with coral reefs threatened by ocean warming in some areas. Sea level rise is likely to threaten the limited ground water resources. High islands often experience high rainfall intensities, frequent landslides and tectonic environments in which landslides and earthquakes are not uncommon with (occasional) volcanic eruptions. Small islands may have low adaptive capacity and high adaptation costs relative to GDP.	Sea-level rise and storms increase threats to economic growth and populations which are concentrated along coastlines; reduced land availability for urban expansion; damage to port and tourism facilities from sea-level rise, storms and floods.
<b>Mountain ecosystems</b>	Accelerated glacial melting, rockfalls/landslides and glacial lake outburst floods, leading to increased debris flows, river bank erosion and floods and more extensive outwash plains and, possibly, more frequent wind erosion in intermontane valleys. Enhanced snow melt and fluctuating stream flows may produce seasonal floods and droughts. Melting of permafrost in some environments. Faunal and floral species migration. Earthquakes, landslides and other geophysical hazards may also occur in these environments.	Human insecurity resulting from glacial lake outbursts and landslides; Reduced income from tourism activities as snow patterns change
<b>Volcanic environments</b>	Recently active volcanoes (erupted in last 10,000 years – see <a href="http://www.volcano.si.edu">www.volcano.si.edu</a> ). Often fertile soils with intensive agriculture and landslides on steep slopes. Subject to earthquakes and volcanic eruptions including pyroclastic flows and mudflows/lahars and/or gas emissions and occasionally widespread ashfall.	Damage to infrastructure, loss of life and livelihoods due to natural disasters

## APPENDIX 4 TEMPLATE TOR FOR EIA CONSULTANTS

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### A. Objectives

1. The objective of the services are (i) to conduct [environmental impact assessment (EIA) or initial environmental examination (IEE)] of the proposed subsequent tranche (No [2 or 3]) of the 39256-MON Urban Transport Development Investment Project to (i) identify potential environmental impacts on physical, environmental, ecological, social, cultural and economic resources, and (ii) prepare [EIA/IEE] report along with environmental management plan (EMP), in both English and Mongolian, and in compliance with MON Law on Environmental Impact Assessment (1998, amended 2002) and ADB's Safeguard Policy Statement (SPS 2009).

### B. Scope of Work

2. The consultant's scope of work will include the following tasks:

- (i) Review prevailing government regulations and ADB guidelines and policies governing the assessment and management of environmental impacts of projects;
- (ii) Prepare a scoping document for the environmental studies to be carried out under the MFF tranche;
- (iii) Support the EA in preparing an official project classification request to the Ministry of Nature, Environment and Tourism (MNET);
- (iv) Review the environment performance of preceding tranches, with documentation in the [EIA/IEE]
- (v) Undertake the [EIA/IEE]<sup>6</sup> to assess the direct, indirect, induced and cumulative environmental impacts of the MFF tranche such as: (a) ecological impacts; (b) soil erosion and desertification; (c) noise and air pollution (including dust) during construction; (d) earthwork and related management of borrow pits, (e) river crossings and related impacts on water quality, sediment transport and erosion, (f) occupational and community health and safety from construction activities; (g) operational traffic safety measures; (h) areas with known archeological or cultural heritage value; and (i) potential spills of hazardous or toxic chemicals and an appropriate response plan;
- (vi) Ensure adequate public consultation, information disclosure; The Consultant will advise the borrower/client that meaningful consultation with affected people will be carried out, and will document the consultation process in the [EIA/IEE]; The list of people attending the consultation, time and locations; subject discussed during consultation should be recorded in systematic manner and should be attached in the [EIA/IEE] report as an appendix;
- (vii) Support the EA in reviewing and adapting the project level grievance redress mechanism (GRM) established under preceding project tranches, covering formal and informal

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<sup>6</sup> ADB's SPS 2009 requires the preparation of a full EIA for environment category A projects, and a full IEE for environment category B projects.

channels, and setting out the timeframe and mechanisms for resolving complaints about environmental performance;

- (viii) Prepare an [EIA or IEE] report that conforms to the ADB Safeguards Policy Statement of 2009 (SPS) as detailed in Appendix 1-Safeguard Requirements 1: Environment. The [EIA or IEE] will be developed in English and translated in Mongolian. The [EIA or IEE] must include (but not limited to): (a) review of environment performance and EMP compliance of preceding tranches; (b) screening of environmental risks and impacts; (c) project's area of influence, including relevant items within project control and the items outside its control; (d) environmental baseline indicators and measurable performance targets for both output and outcome indicators; (e) description of direct, cumulative and induced impacts; (f) confirmation of presence/absence of project associated facilities, including due diligence; (g) description of risks to physical cultural resources, including physical cultural resources protection plan if necessary; (h) discussion on climate change adaptation and mitigation; (i) occupational and community health and safety (including emergency preparedness and response plans); (j) economic displacement (i.e. impact on livelihood other than through land acquisition and resettlement); (k) biodiversity conservation and sustainable management of natural resources; (l) pollution prevention and abatement in accordance to internationally accepted standards and guidelines (i.e. IFC's Environmental Health and Safety Guidelines); (m) for category A projects, alternative analysis for all project components (including the no-project option) to the project's location, design, technology, and components and their potential environmental and social impacts and discuss the rationale for selecting the particular alternative proposed; (n) public consultation and grievance redress mechanism; (o) definition of project risks and project assurances; and (p) environmental management plan (see below);
- (ix) As part of the [EIA/IEE] report, prepare an environmental management plan (EMP) detailing mitigation and monitoring measures, associated costs and sources of funds, implementation responsibilities/arrangements, reporting requirements, details of environmental management capacity strengthening program to ensure proper implementation of the EMP, and other details specified in the SPS 2009; The environmental monitoring program must address all activities that have been identified to have potential significant impacts on the environment, during normal operations and upset conditions. Base environmental monitoring activities on direct or indirect and measurable indicators or emissions, effluents, and resource use whenever applicable. Provide for sufficient monitoring frequency, for regular analysis and review of data. Design corrective actions for implementation. Design evaluation of environmental performance against internationally published benchmarks for resource consumption, energy use and waste generation. Provide for the implementation of a detailed audit or survey if inefficiencies are identified.
- (x) Solicit and incorporate comments on the draft [EIA/IEE] from ADB, MNET, PMU, NGOs, civil society, and other stakeholders. Present the draft [EIA/IEE] at ADB peer-review meeting. Finalize the report to accommodate inputs from all the stakeholders; and submit the reports to MNET, and ensure an environmental impact clearance certificate or equivalent is obtained from MNET.

### C. Organization and Staffing

3. The services are expected to be provided by a team comprising at least one international and one national environmental consultant.

4. **The International Environmental Specialist** shall have at least 15 years experience and familiarity with all aspects of environmental management and with significant experience in environmental management and monitoring of urban infrastructure projects, environmental assessment and / or implementation of environmental mitigation measures on construction subprojects. The specialist shall also have experience working in multi-disciplinary teams of experts and leading a national team of consultants. Candidates with higher degrees in environmental engineering or environmental science or environment management are preferred.

5. **The National Environmental Specialists** shall at least be graduates in environmental science, environmental engineering, geological science, engineering hydrology, biology or related discipline with significant experience in environmental management and monitoring of subprojects, environmental assessment and/or design and implementation of environmental mitigation measures.

### D. Budget

6. The estimated cost for preparation of each IEE and EIA are provided in Table 1 and Table 2, respectively. A team of International and national specialists are recommended for these studies.

**Table 1: Estimated Cost of IEE Preparation for subsequent tranches of MFF (Cat. B)**

Item	Unit Quantity	Unit Cost (US\$)	Total Cost (US\$)
International Environmental Specialist	1.5 Person-months	20,000	30,000
National Environmental Specialist	2 Person-months	4,000	8,000
Data collection, sampling, analysis	Lump sum	3,000	3,000
International travel	1 trip	7,000	7,000
Meaningful consultation	2 consultations	1,500	3,000
Local transportation	Lump sum	1,500	1,500
Communication	2 months	500	1,000
Report production and distribution	Lump sum	1,500	1,500
Contingencies	Lump sum	3,000	3,000
<b>Total</b>			<b>58,000</b>

**Table 2: Estimated Cost of EIA Preparation for subsequent tranches of MFF (Ca. A)**

Item	Unit Quantity	Unit Cost (US\$)	Total Cost (US\$)
International Environmental Specialist	2.5 Person-months	20,000	50,000
National Environmental Specialist	3 Person-months	4,000	12,000
National biologist/hydrologist	1 person-month	4,000	4,000
Data collection, sampling, analysis	Lump sum	10,000	10,000
International travel	2 trips	5,000	10,000
Meaningful consultation	3 consultations	1,500	4,500
Local transportation	Lump sum	2,000	2,000



Communication	3 months	500	1,500
Report production and distribution	Lump sum	2,000	2,000
Contingencies	Lump sum	5,000	5,000
<b>Total</b>			<b>101,000</b>

### **E. Supervision**

7. The team will work in association with the PMU, reporting to the PMU Director and the PMU Safeguard Unit (PMU-SU) on a day-to-day basis. The team will report to the ADB project team on a weekly basis.

### **F. Outputs**

8. The team's outputs will include: (i) an official request to MNET for General EIA and project classification; (ii) a first draft [EIA/IEE] after one month, reviewing the available environmental reports, baseline data, and preparing preliminary assessment of impacts associated with the proposed MFF tranche, (iii) a mid-term draft [EIA/IEE]; (v) a final draft [EIA/IEE] in English and Mongolian, fully responsive to the project specificities and ADB's SPS 2009, (vi) a PowerPoint presentation of the final draft [EIA/IEE]; (vii) a revised [final draft EIA or final IEE] report, incorporating comments from ADB and other stakeholders, to be disclosed on ADB's project website.

## APPENDIX 5 DETAILED OUTLINE FOR EIA/IEE

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This outline is part of the Safeguard Requirements 1 of ADB's SPS 2009. An environmental assessment report is required for all environment category A and B projects. Its level of detail and comprehensiveness is commensurate with the significance of potential environmental impacts and risks. A typical EIA report (for category A) contains the following major elements, and an IEE (for category B) may have a narrower scope depending on the nature of the project. The substantive aspects of this outline will guide the preparation of environmental impact assessment reports, although not necessarily in the order shown.

### A. Executive Summary

This section describes concisely the critical facts, significant findings, and recommended actions.

#### ***Suggested structure of the Chapter:***

- (i) *Project Introduction and Purpose*
- (ii) *Description of the Environment*
- (iii) *Alternatives*
- (iv) *Project Categorization and Environmental Risk*
- (v) *Environmental Impacts and Mitigation During Construction*
- (vi) *Environmental Impacts and Mitigation During Operation*
- (vii) *Public Consultation and Grievance Redress Mechanism (GRM)*
- (viii) *Environmental Management and Monitoring Plan*
- (ix) *Conclusion*

### B. Introduction

The introduction provides an overview of the big picture from the national and municipal level. It describes the project background, the reasons and needs for having the project, the present status of infrastructure related to the project in a provincial setting, and highlights of benefits. It presents the project's environmental categorization by ADB and MNET, and the status of approval of environmental impact assessments. It also describes the structure of the IEE/EIA.

#### ***Suggested structure of the Chapter:***

- (i) *Introduction and Purpose*
- (ii) *Environmental Categorization, ADB and MON approval of IEE/EIA*
- (iii) *Structure of the IEE/EIA Report*

### C. Policy, Legal, and Administrative Framework

This section discusses the national and local legal and institutional framework within which the environmental assessment is carried out. It also identifies project-relevant international environmental agreements to which the country is a party.

#### ***Suggested structure of the Chapter:***

- (i) *Mongolia's Environmental Policy*
- (ii) *Environmental Impact Assessment Requirements (ADB and MON)*

## **D. Description of the Project**

This section describes the proposed project; its major components; and its geographic, ecological, social, and temporal context, including any associated facility required by and for the project (for example, access roads, quarries and borrow pits, and spoil disposal). It reviews the environment performance of preceding tranche(s), and suggests corrective actions. It normally includes drawings and maps showing the project's layout and components, the project site, and the project's area of influence.

### ***Suggested structure of the Chapter:***

- (i) *Justification and Rationale*
  - a. *Development needs addressed by the project*
  - b. *Objective and Approach of the Project Investment Program*
  - c. *Review of environment performance of preceding tranche(s)*
- (ii) *Project Components and Subcomponents under Tranche [2/3]*
  - d. *Component A*
  - e. *Component B*
  - f. *Component C*
  - g. *Component X*
  - h. *Associated facilities*
- (iii) *Project's Area of Influence*

## **E. Description of the Environment (Baseline Data)**

This section describes relevant physical, biological, and socioeconomic conditions within the study area. It also looks at current and proposed development activities within the project's area of influence, including those not directly connected to the project. It indicates the accuracy, reliability, and sources of the data.

### ***Suggested structure of the Chapter:***

- (i) *Geography, Topography and Geology*
- (ii) *Meteorology and Climate*
- (iii) *Hydrology, Surface Water Quality*
- (iv) *Air Quality*
- (v) *Noise*
- (vi) *Climate Change*
- (vii) *Natural disasters*
- (viii) *Ecological Resources*
- (ix) *Physical Cultural Resources*
- (x) *Socio-Economic Situation*
- (xi) *Land Use, Urban Development Master Plan*

## **F. Analysis of Alternatives**

This section examines alternatives to the proposed project site, technology, design, and operation—including the no project alternative—in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements. It also states the basis for selecting the particular project design proposed and, justifies recommended emission levels and approaches to pollution prevention and abatement. An alternative analysis is required for Cat. A projects; such as analysis is recommended for Cat. B projects, especially the comparison of with- and without project alternatives.

**Suggested structure of the Chapter:**

- (i) *With and Without Project Alternatives*
- (ii) *Alternatives related to Project Design*
  - a. *Alternative 1 (e.g. road alignment)*
  - b. *Alternative 2 (e.g. type of BRT system)*
  - c. *Alternative 3*
  - d. *Alternative x*

**G. Anticipated Environmental Impacts and Mitigation Measures**

This section predicts and assesses the project's likely positive and negative direct and indirect impacts to physical, biological, socioeconomic (including occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods through environmental media [SPS 2009, Appendix 2, para. 6]), and physical cultural resources in the project's area of influence, in quantitative terms to the extent possible; identifies mitigation measures and any residual negative impacts that cannot be mitigated; explores opportunities for enhancement; identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions and specifies topics that do not require further attention; and examines global, transboundary, and cumulative impacts as appropriate.

**Suggested structure of the chapter:**

- (i) *Positive Impact and Environmental Benefits*
- (ii) *Screening of Potential Impacts*
- (iii) *Impacts and Mitigation Measures Associated with Project Location, Planning and Design*
- (iv) *Environmental Impacts and Mitigation Measures during Construction*
- (v) *Environmental Impacts and Mitigation Measures during Operation*
- (vi) *Induced and Cumulative Impacts*
- (vii) *Unanticipated Impacts during Construction and Operation*

**H. Information Disclosure, Consultation, and Participation**

This section (i) describes the process undertaken during project design and preparation for engaging stakeholders, including information disclosure and consultation with affected people and other stakeholders; (ii) summarizes comments and concerns received from affected people and other stakeholders and how these comments have been addressed in project design and mitigation measures, with special attention paid to the needs and concerns of vulnerable groups, including women, the poor, and Indigenous Peoples; and (iii) describes the planned information disclosure measures (including the type of information to be disseminated and the method of dissemination) and the process for carrying out consultation with affected people and facilitating their participation during project implementation.

**Suggested structure of the chapter:**

- (i) *Public Consultations during Project Preparation*
  - a. *Consultation of government officials, experts and NGOs*
  - b. *First round of public consultation*
  - c. *Second round of public consultation*
  - d. *Third round of public consultation (if relevant)*
- (ii) *Future Public Consultation Program*
- (iii) *Information Disclosure*

**I. Grievance Redress Mechanism**

This section describes the grievance redress framework (both informal and formal channels), setting out the time frame and mechanisms for resolving complaints about environmental performance.

***Suggested structure of the chapter:***

- (i) *Current Practice in Mongolia*
- (ii) *Grievance Redress Mechanism established for Tranche 1 of the Project*
- (iii) *Types of Grievances Received during Tranche 1*
- (iv) *Types of Grievances Expected during Tranche 2/3 and Eligibility Assessment*
- (v) *GRM Steps and Timeframe*

**J. Economic Assessment**

This section presents (i) the total project cost for the proposed project tranche; (ii) the economic internal rate of return (EIRR) for each component and for the entire tranche; and (iii) the environmental management costs of the proposed project tranche, including cost estimates for training, institutional strengthening and awareness raising; mitigation and protection measures during design, construction and operation; and supervision, monitoring and reporting.

**K. Environmental Management Plan**

This section deals with the set of mitigation and management measures to be taken during project implementation to avoid, reduce, mitigate, or compensate for adverse environmental impacts (in that order of priority). It may include multiple management plans and actions. It includes the following key components (with the level of detail commensurate with the project's impacts and risks):

**(i) Mitigation:**

- (a) identifies and summarizes anticipated significant adverse environmental impacts and risks;
- (b) describes each mitigation measure with technical details, including the type of impact to which it relates and the conditions under which it is required (for instance, continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate; and
- (c) provides links to any other mitigation plans (for example, for involuntary resettlement, Indigenous Peoples, or emergency response) required for the project.

**(ii) Monitoring:**

- (a) describes monitoring measures with technical details, including parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits and definition of thresholds that will signal the need for corrective actions; and
- (b) describes monitoring and reporting procedures to ensure early detection of conditions that necessitate particular mitigation measures and document the progress and results of mitigation.

**(iii) Implementation arrangements:**

- (a) specifies the implementation schedule showing phasing and coordination with overall project implementation;
- (b) describes institutional or organizational arrangements, namely, who is responsible for carrying out the mitigation and monitoring measures, which may include one or more of the following additional topics to strengthen environmental management capability: technical assistance programs, training programs, procurement of equipment and supplies related to environmental management and monitoring, and organizational changes; and
- (c) estimates capital and recurrent costs and describes sources of funds for implementing the environmental management plan.

(iv) Performance indicators: describes the desired outcomes as measurable events to the extent possible, such as performance indicators, targets, or acceptance criteria that can be tracked over defined time periods.

***Suggested structure of the chapter:***

- (i) Objective and Structure*
- (ii) Implementing Organizations and Their Responsibilities*
- (iii) Summary of Potential Impacts and Mitigation Measures*
- (iv) Environmental Monitoring and Inspection*
- (v) Institutional Strengthening and Training*
- (vi) Environmental Reporting*
- (vii) Mechanisms for Feedback and Adjustment*

**L. Conclusion and Recommendation**

This section provides the conclusions drawn from the assessment and provides recommendations. It also identifies residual risks and required project assurances.

***Suggested structure of the chapter:***

- (i) Project Risks and Assurances*
- (ii) Major Environmental Impacts and Mitigation Measures*
- (iii) Overall Conclusion*

**APPENDICES**

## APPENDIX 6 SAMPLE IMPACT ASSESSMENT AND MITIGATION MATRIX

Impact assessment and mitigation matrices are required to describe potential project impacts and risks, and define mitigation and compensation measures. Two examples are presented, a simplified form (based on the matrix of tranche 1 of 39256-MON, categorized B for environment), and a more detailed form (to be used for Category A projects). These are examples only, and can be adapted as necessary.

**Sample 1: Simplified Impact Assessment and Mitigation Matrix of Tranche 1, 39256-MON (category B)**

Issue	Mitigation or Safeguard Measures	Location	Who Implements	Who Supervises/ Approves
<b>Detailed Design and Construction Preparation Phase</b>				
Institutional strengthening	• Appoint one environment officer at PMU to be responsible for coordination of GRM and EMP implementation (PMU-SU).	-	PMU	EA, ADB
	• Contract licensed laboratory to conduct quarterly air, noise and surface water monitoring	-	PMU, PMU-SU	EA
	• Hire Loan Implementation Environmental Consultants (LIEC) under loan implementation consultancy services	-	EA, PMU	ADB
	• Appoint Environment, Health and Safety Officer (EHSO) for each construction site	Construction sites	Contractors	PMU-SU
Design of culverts and drainage	• Reexamine existing culverts of drainage channels, confirm adequacy of the flow capability of the culverts. • Assess requirement for stormwater drainage pre-treatment prior to discharge to Selbe River. Design pre-treatment system if necessary	T1-A, T1-B	DI	PMU, LIEC
Earthwork, spoil management	• Optimize and quantify required earthwork and balance between cutting and filling. • If relevant, identify suitable borrow pits and spoil disposal sites, develop borrow pit and spoil disposal site management plan, and get approval from MNET.	All Tranche 1 construction sites	DI	MNET, LIEC
Tree planting and re-vegetation plan	• Conduct detailed assessment of trees and vegetation that will need to be removed. • Develop a tree removal and replanting plan, including vegetation protection (fencing) and construction site re-	T1-B, T1-A	DI	MUB Dendrologist, EA

Issue	Mitigation or Safeguard Measures	Location	Who Implements	Who Supervises/ Approves
	vegetation plan			
EMP update	<ul style="list-style-type: none"> <li>Review and update EMP after detailed design</li> </ul>	-	PMU-SU	LIEC, ADB, MNET
Bidding documents and contractors' qualifications	<ul style="list-style-type: none"> <li>Include environmental provisions in the RFPs.</li> <li>Include environmental section in the TOR for bidders.</li> <li>Include environmental clauses for contractors in reference to the EMP and monitoring plan in the construction and supply contracts.</li> </ul>	-	PMU, Tendering Agency, LIEC	EA, ADB
Grievance Redress Mechanism (GRM)	<ul style="list-style-type: none"> <li>Appoint a GRM coordinator prior to construction.</li> <li>Establish a project public complaints center (PPCU)</li> <li>Provide training to GRM coordinator and entry points (PMU-SU)</li> <li>Introduce GRM to potentially affected people</li> </ul>	-	PMU, LIEC, PMU-SU, PPCU	EA, ADB
Environmental operation and supervision manual	<ul style="list-style-type: none"> <li>Contractors will be required to prepare an environmental operation and supervision manual, including an environmental, health and safety management plan, for approval by PMU and MNET.</li> </ul>	All Tranche 1 construction sites	Contractors	PMU, LIEC, MNET
Environmental management training	<ul style="list-style-type: none"> <li>LIEC or other environmental specialists provide training on implementation and supervision of EMP implementation to relevant stakeholders, following the approved training plan.</li> </ul>	Ulaanbaatar	LIEC, PMU-SU, environment specialists	EA, PMU, ADB
Temporary traffic management	<ul style="list-style-type: none"> <li>A temporary traffic control and operation plan will be prepared and approved by the MUB prior to any construction, defining: (i) Provisions for diverting or scheduling construction traffic to peak traffic hours; (ii) Regulating traffic at road crossings for pedestrians; (iii) Identify suitable road crossings for pedestrians</li> </ul>	Project's area of influence	DI, local traffic police	EA
<b>Construction Phase</b>				
Soil Erosion	<ul style="list-style-type: none"> <li>Soil erosion management plan to be prepared by the contractor and to be approved by the responsible authority before construction starts;</li> <li>Minimizing the area of soil clearance;</li> </ul>	Tranche 1 road improvement sites and bus stations	Contractors	PMU-SU, LIEC



Issue	Mitigation or Safeguard Measures	Location	Who Implements	Who Supervises/ Approves
	<ul style="list-style-type: none"> <li>• Maintaining slope stability at cut faces by implementing erosion protection measures;</li> <li>• Construction in erosion and flood-prone areas should be mainly restricted to the dry season;</li> <li>• Control silt runoff and cover soil stockpiles;</li> <li>• Locate temporary soil stockpiles in areas where runoff will not induce sedimentation of waterways;</li> <li>• Properly slope and re-vegetate disturbed surfaces; and</li> <li>• Protect slopes on both sides of any culverts to prevent soil and water loss.</li> </ul>			
Soil Contamination	<ul style="list-style-type: none"> <li>• Store chemicals/hazardous products and waste on impermeable surfaces in secure, covered areas;</li> <li>• Remove all construction wastes from the site to approved waste disposal sites;</li> <li>• Establish emergency preparedness and response plan (Spill Management Plan);</li> <li>• Provide spill cleanup measures and equipment at each construction site;</li> <li>• Conduct training in emergency spill response procedures.</li> </ul>	All Tranche 1 sites	Contractors	PMU-SU, LIEC
Borrow pits and spoil disposal sites (if relevant)	<ul style="list-style-type: none"> <li>• Develop borrow pits and spoil disposal site management and restoration plans, to be approved by responsible authority;</li> <li>• Pit restoration will follow the completion of works in full compliance with all applicable standards and specifications, and will be required before final acceptance and payment under the terms of contracts</li> </ul>	Borrow pits and spoil disposal sites	Contractors	MNET
Protection of Surface Water	<ul style="list-style-type: none"> <li>• Develop and implement contingency plans for control of oil and other dangerous substances (Spill Management Plan);</li> <li>• Fuel storage, maintenance shop and vehicle cleaning areas must be stationed at least 300m away from the nearest water body;</li> <li>• Construction wastes and materials (e.g. fuel) will be properly contained during construction. Wastes will be removed from site and taken to approved disposal facilities;</li> <li>• Water collection basins and sediment traps will be installed in all areas where construction equipment is washed;</li> <li>• Effective septic treatment and disposal systems will be</li> </ul>	All Tranche 1 sites	Contractors	PMU-SU, LIEC

**Appendix 6 – Sample Impact Assessment and Mitigation Matrix**

<b>Issue</b>	<b>Mitigation or Safeguard Measures</b>	<b>Location</b>	<b>Who Implements</b>	<b>Who Supervises/ Approves</b>
	<ul style="list-style-type: none"> <li>installed at construction camps; and</li> <li>• Early installation of appropriate decontamination technology for surface water drainage outlets (T1-A).</li> <li>• Quarterly monitoring of surface water quality in Selbe River</li> </ul>	Upstream and downstream of T1-A and T1-B	Licensed laboratory	PMU-SU, LIEC
Air quality	<ul style="list-style-type: none"> <li>• Asphalt plants and mixers will be located as far away as possible (at least 200 m downwind) from the nearest sensitive receptor (such as hospitals and schools);</li> <li>• Water will be sprayed on construction sites and material handling routes where fugitive dust is generated;</li> <li>• Effective dust suppression measures will be implemented near sensitive receptors such as schools, hospitals, or housing;</li> <li>• Fuel &amp; chemicals will be covered / stored to minimize emissions;</li> <li>• Trucks carrying earth, sand or stone will be covered with tarps or other suitable cover to avoid spilling;</li> <li>• Construction vehicles and machinery will be maintained to a high standard to ensure efficient fuel-burning (note that local standards do not exist for vehicle emissions);</li> <li>• Quarterly air quality monitoring around construction sites.</li> </ul>	All Tranche 1 sites	Contractors	PMU-SU, LIEC
		Around construction sites	Licensed laboratory	PMU-SU, LIEC
Noise	<ul style="list-style-type: none"> <li>• Locate sites for rock crushing, concrete-mixing, and similar activities at least 500m away from sensitive areas;</li> <li>• Use mobile noise barriers during construction activities, especially in <i>ger</i> areas which have no inherent noise insulation;</li> <li>• Restrict construction activities between 8am-6pm;</li> <li>• Agreements with nearby schools, hospitals and residents regarding heavy machinery work to avoid any unnecessary disturbances;</li> <li>• Seek suggestions from community members to reduce noise annoyance</li> </ul>	All Tranche 1 sites	Contractor	PMU-SU, LIEC

**Appendix 6 – Sample Impact Assessment and Mitigation Matrix**

<b>Issue</b>	<b>Mitigation or Safeguard Measures</b>	<b>Location</b>	<b>Who Implements</b>	<b>Who Supervises/ Approves</b>
	<ul style="list-style-type: none"> <li>Quarterly noise monitoring around construction sites and at sensitive areas.</li> </ul>	All Tranche 1 sites, sensitive areas (see monitoring plan)	Licensed laboratory	PMU-SU, LIEC
Waste Management	<ul style="list-style-type: none"> <li>Confined storage of solid wastes away from sensitive receptors and regularly take to approved disposal facility;</li> <li>Provide appropriate waste storage containers for workers' and construction wastes;</li> <li>Use approved contractor to remove all wastes from sites;</li> <li>Removal of residual materials, wastes and contaminated soils that remain on the ground after construction;</li> <li>Prohibit burning of waste;</li> <li>Carefully handle waste asbestos if it is found during any demolition activities, following the emergency protocols on which the workers will be briefed.</li> </ul>	All Tranche 1 construction sites	Contractors	PMU-SU, LIEC
Flora & Fauna	<ul style="list-style-type: none"> <li>Comply with the approved tree removal and replanting plan, including vegetation protection (fencing) and construction site re-vegetation plan;</li> <li>Protect existing trees during road widening, removing only those that are absolutely necessary;</li> <li>Remove trees in early spring in order to ensure no nesting birds are disturbed;</li> <li>For every one tree removed, replant at least two in suitable city locations after construction;</li> <li>Strip for trees/vegetation in the median of the road where space allows;</li> <li>Regularly monitor health of replanted trees</li> </ul>	T1-A, T1-B, bus stations	Contractors, IA	MUB Dendrologist, PMU-SU, LIEC
Physical cultural	<ul style="list-style-type: none"> <li>Inform the caretakers of temple site in advance of the type and duration of impacts, including Temporary Traffic Management</li> </ul>	T1-B Chinggis Road (Bogd Khan	Contractors	PMU-SU, State Professional

## Appendix 6 – Sample Impact Assessment and Mitigation Matrix

<b>Issue</b>	<b>Mitigation or Safeguard Measures</b>	<b>Location</b>	<b>Who Implements</b>	<b>Who Supervises/ Approves</b>
resources	Plan; • Site assessment – document pre-condition of site prior to construction (photographs) to avoid any false claims of damages induced by the project; • Do not operate machinery during culturally significant festivals; • Conduct regular meetings with site manager to confirm adequacy of protection measures • Establish chance-finds procedure for undiscovered underground cultural sites and objects	Temple)  T1-A and T1-B		Inspection Agency, Ministry of Education, Science and Culture
<b>Community Health &amp; Safety</b>	<ul style="list-style-type: none"> <li>• Prior to construction, inform residents through media and businesses on the forthcoming activities, including the dates and duration of expected traffic disruption;</li> <li>• Install signs at construction sites warning people of potential dangers;</li> <li>• Provide physical barrier to limit access to construction sites, whenever possible;</li> <li>• No use of heavy machinery after daylight.</li> <li>• Comply with temporary traffic control plan (see above)</li> <li>• Conduct regular public consultations with residents living adjacent to construction sites to identify community complaints about noise, air pollution, and other health and safety concerns, and seek suggestions from community members to mitigate nuisances.</li> </ul>	Local newspapers	PMU (with support of communications specialist)	EA, LIEC
		All Tranche 1 construction sites	Contractors	PMU-SU, LIEC, local traffic police
<b>Occupational Health &amp; Safety</b>	<ul style="list-style-type: none"> <li>• Provide a clean and sufficient supply of fresh water;</li> <li>• Provide an adequate number of latrines and other sanitary arrangements at the site and work areas, and ensure that they are cleaned and maintained in a hygienic state.</li> <li>• Provide garbage receptacles at construction site and camps, which will be periodically cleared to prevent outbreak of diseases will be setup.</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</li> </ul>	All Tranche 1 construction sites	Contractors, PMU-SU	PMU, LIEC, PPCU
		All Tranche 1 construction sites and camps	Contractors	PMU-SU, LIEC

Issue	Mitigation or Safeguard Measures	Location	Who Implements	Who Supervises/ Approves
	<p>regulations, for workers;</p> <ul style="list-style-type: none"> <li>• Develop an emergency response plan to take actions on accidents and emergencies, including environmental and public health emergencies associated with hazardous material spills and similar events;</li> <li>• Establish a Records Management System to store and maintain easily retrievable records (occupational accidents, diseases, spills, etc) incidents;</li> <li>• Display posters in Mongolian drawing attention to site safety, rescue and industrial health regulations in relevant areas of the site;</li> <li>• Provide training to all construction workers in basic sanitation and health care issues, general health and safety matters, and on the specific hazards of their work.</li> <li>• Implement SITs/HIV/AIDS and other communicable diseases awareness and prevention program.</li> </ul>			
Utilities Provision	<ul style="list-style-type: none"> <li>• Assess construction locations in advance for potential disruption to services and identify risks before starting construction;</li> <li>• For unavoidable disruptions dates and duration of service interruptions will be given to all Affected People in advance.</li> </ul>	All Tranche 1 construction sites	Contractors	PMU-SU, LIEC
<b>Operation Phase</b>				
Surface water quality	<ul style="list-style-type: none"> <li>• Regularly collect and properly dispose litter and debris from sidewalks, driveways, and parking lots along Chingeltei Avenue, especially near the Selbe river;</li> <li>• Clean the roadside catch basins before the wet season to avoid river pollution by storm water runoff flushing debris and dirty silt;</li> <li>• Place garbage bins and containers along the road network;</li> <li>• Prohibit the construction of car washing and gas stations near the Selbe river and drainage channels;</li> <li>• Conduct semi-annual water quality monitoring during first year of operation</li> </ul>	<p>Tranche 1 T1-A and T1-B</p> <p>Selbe river, downstream of T1-A.</p>	<p>IA</p> <p>Licensed laboratory</p>	<p>EA</p> <p>PMU-SU</p>
Noise	<ul style="list-style-type: none"> <li>• No new school, hospital or other sensitive facilities will be</li> </ul>	T1-A and T1-B	EA	

Issue	Mitigation or Safeguard Measures	Location	Who Implements	Who Supervises/ Approves
	allowed to be built without noise protection measures within 200 m from the central line of the roads to prevent noise impacts to these facilities in the future			
Vegetation	<ul style="list-style-type: none"> <li>All trees and vegetation covers will be regularly monitored and properly maintained.</li> </ul>	T1-A and T1-B	IA	EA, MUB Dendrologist

### Sample 2: Detailed Impact Assessment and Mitigation Matrix (for Category A projects)

Phase/ Activities	Potential Impacts	Significance of Impacts*				Mitigation Measures	Residual Negative Impacts		Responsible Agency	Est. Budget
		Direction (- / +)	Magnitude (L / M / H)	Probability (L / M / H)	Duration (S / M / L)		Impacts	Compensation Measures		
Environmental Issues Associated with Project Siting / Preconstruction										
Siting Activities	e.g. Resettlement, encroachment into critical habitats, agrosystems, etc									
Environmental Issues Associated with Project Construction										
Construction Activities	e.g. Hydrology, water quality, air quality, noise, biodiversity (flora, fauna, critical habitats), natural resources, pollution discharges, worker safety and health, etc									
Environmental Issues Associated with Project Operation										
Operation Activities	e.g. Hydrology, water quality, air quality, noise, biodiversity (flora, fauna, critical habitats), natural resources, pollution									

discharges, worker safety and health, etc
<b>Other items as required (e.g. Emergency Response Procedures)</b>

\*Impact Significance Direction, Magnitude, Probability and Duration Coding (Indicative examples only)

<b>Parameter / Code</b>	<b>Definition</b>
<b>Predicted Impact Direction</b>	
- = Negative	Impact is unfavorable, and will cause a reduction in the value or quality of environmental and social resources
+ = Positive	Impact is favorable, and will cause an increase in the value or quality of environmental and social resources
<b>Predicted Impact Magnitude</b>	
L = Low	Above typical background conditions or concentrations, but within established / accepted protective standards or: Causing no detectable biological, social or economic parameter changes
M = Moderate	Considerably above background conditions or concentrations or established / accepted protective standards, but below established criteria or scientific effects thresholds associated with potential adverse effects or: Causing detectable biological, social or economic parameter changes, but within the range of natural variability
H = High	Above established criteria or scientific effects thresholds associated with potential adverse effects or: Causing (a) detectable change(s) in biological, social or economic parameters that is outside the range of natural variability
<b>Predicted Impact Probability</b>	
L = Low	Less than 10% likelihood of occurring over the duration of the impact
M = Moderate	Between 10% and 90% likelihood of occurring over the duration of the impact
H = High	More than 90% likelihood of occurring over the duration of the impact
<b>Predicted Impact Duration</b>	
S = Short	Effects are significant for less than one year
M = Medium	Effects are significant for one to ten years
L = Long	Effects are significant for greater than ten years

## APPENDIX 7 SAMPLE ENVIRONMENTAL MONITORING PLAN

The following environmental monitoring plan was prepared for Tranche 1 of the proposed 39256-MON Urban Transport Development Project. Tranche 1 was classified as Category B for environment. More comprehensive sample environmental monitoring plans for Category A project can be downloaded from ADB's project site (<http://www.adb.org/Projects>)

**Table 1: Sample Environmental Monitoring Plan (for Tranche 1 of 39256-MON)**

Environmental Media/Issue	Location, Parameters, Monitoring Technique	Responsibility & Frequency
<b>Pre-Construction Phase</b>		
Project readiness	<ul style="list-style-type: none"> <li><b>Method:</b> Review of PMU's and contractor's readiness to implement the project based on assessment of Project Readiness Indicators (Table 5)</li> <li><b>Parameters:</b> Table 5</li> </ul>	LIEC – once before construction
Surface water quality	<ul style="list-style-type: none"> <li><b>Method, Location:</b> Selbe river water quality monitoring upstream and downstream from T1-A and T1-C (4 monitoring points)</li> <li><b>Parameters:</b> Turbidity, total suspended solids, hydrocarbons, BOD<sub>5</sub>, specific conductance, pH</li> </ul>	Licensed laboratory – once before construction
<b>Construction Phase</b>		
Soil erosion and contamination	<ul style="list-style-type: none"> <li><b>Method, Location:</b> Visual inspection of all construction sites</li> <li><b>Parameters:</b> (i) adequacy of soil erosion prevention measures; (ii) adequacy of soil contamination prevention techniques; (iii) evidence of excessive soil erosion or soil contamination</li> </ul>	EHSO - daily PMU-SU – bi-weekly LIEC - yearly
Solid and liquid waste management	<ul style="list-style-type: none"> <li><b>Method, Location:</b> Visual inspection of all construction sites</li> <li><b>Parameters:</b> (i) adequacy of solid and liquid waste management, storage and containment system; (ii) presence of solid waste dumps, waste fires</li> </ul>	EHSO - daily PMU-SU – bi-weekly LIEC - yearly
Vegetation	<ul style="list-style-type: none"> <li><b>Method, Location:</b> Visual inspection of all construction sites</li> <li><b>Parameters:</b> adequacy of vegetation protection measures; evidence of damage to vegetation; compliance with approved tree management plan</li> </ul>	EHSO - daily
Construction site health and safety	<ul style="list-style-type: none"> <li><b>Method, Location:</b> Visual inspection and interviews with construction workers and contractors at all construction sites</li> <li><b>Parameters:</b> (i) adherence to the approved Environmental, Health and Safety Management Plan (EHSMP); (ii) performance of the EHSO; (iii) worker complaints and concerns.</li> </ul>	EHSO - daily PMU-SU – bi-weekly LIEC - yearly
Community health and safety	<ul style="list-style-type: none"> <li><b>Method, Location:</b> Visual inspection of all construction sites, informal interviews with nearby residents</li> <li><b>Parameters:</b> (i) adherence to approved temporary traffic</li> </ul>	PMU-SU – bi-weekly LIEC - yearly



## Appendix 7 – Sample Environmental Monitoring Plan

Environmental Media/Issue	Location, Parameters, Monitoring Technique	Responsibility & Frequency
	management plan; (ii) adequacy of construction site signage and fencing; (iii) adequacy of temporary noise mitigation measures; (iv) accidents involving public and workers; (v) emergencies and responses; (v) public complaints about noise, air pollution, construction site safety etc.	
Induced traffic disturbance	<ul style="list-style-type: none"> <li><b>Method, Location:</b> Visual inspection along construction sites, informal interviews with affected people, consultation of local traffic police</li> <li><b>Parameters:</b> (i) adequacy of, and compliance with, the approved temporary traffic control and operation plan; (ii) satisfaction of affected people.</li> </ul>	PMU-SU – bi-weekly LIEC - yearly
Surface water quality	<ul style="list-style-type: none"> <li><b>Method, Location:</b> Selbe river water quality monitoring upstream and downstream from T1-A and T1-C (4 monitoring points)</li> <li><b>Parameters:</b> Turbidity, total suspended solids, hydrocarbons, BOD<sub>5</sub>, specific conductance, pH</li> </ul>	Licensed laboratory – 4 times per year
Air quality	<ul style="list-style-type: none"> <li><b>Method, Location:</b> Air quality monitoring, on pavements adjacent to intersections, at construction site boundaries, inside boundaries of sensitive receptors (schools, hospitals)</li> <li><b>Parameters:</b> Dust, NO<sub>x</sub>, SO<sub>2</sub>, CO, PM<sub>10</sub>, PM<sub>2.5</sub></li> </ul>	Licensed laboratory – 4 times per year
Noise	<ul style="list-style-type: none"> <li><b>Method, Location:</b> Noise monitoring, on pavements adjacent to intersections, at construction site boundaries, inside sensitive receptors (schools, hospitals)</li> <li><b>Parameters:</b> dB(A)</li> </ul>	Licensed laboratory – 4 times per year
Interview with AP	<ul style="list-style-type: none"> <li><b>Method, Location:</b> Interview with potentially affected people (AP) adjacent to construction sites.</li> <li><b>Parameters:</b> See Monitoring Form 1 - Stakeholder Monitoring Interviews</li> </ul>	PMU-SU - monthly
EMP Compliance Monitoring	<ul style="list-style-type: none"> <li><b>Method, Location:</b> Review of project's adherence with EMP and loan covenants</li> <li><b>Parameters:</b> EMP and loan covenants</li> </ul>	PMU, LIEC - yearly
<b>Construction Completion and Operation Phase</b>		
Post-construction site inspection	<ul style="list-style-type: none"> <li><b>Method, Location:</b> Visual inspection, post-construction environmental condition assessment at each construction site.</li> <li><b>Parameters:</b> See Monitoring Form 2 – Post Construction Environmental Condition</li> </ul>	PMU-SU – twice: two/one week before completion, once after completion
Vegetation	<ul style="list-style-type: none"> <li><b>Method, Location:</b> Visual inspection of replanted trees</li> <li><b>Parameters:</b> Tree growth and health</li> </ul>	PMU-SU – 4 times during first year of operation
Surface water quality	<ul style="list-style-type: none"> <li><b>Method, Location:</b> Selbe river water quality monitoring upstream and downstream from T1-A (4 monitoring points)</li> <li><b>Parameters:</b> Turbidity, total suspended solids, hydrocarbons, BOD<sub>5</sub>, specific conductance, pH</li> </ul>	Licensed laboratory – twice during first year of operation
Interview with AP	<ul style="list-style-type: none"> <li><b>Method, Location:</b> Interview with potentially affected people (AP) adjacent to completed project sites;</li> <li><b>Parameters:</b> (i) Overall satisfaction with project outputs; (ii) concerns and complaints.</li> </ul>	PMU-SU – twice during first year of operation

**Assessment of project readiness.** Before construction, the LIEC will assess the project's readiness in terms of environmental management based on a set of indicators (Table 2). This assessment will demonstrate that environmental commitments are being carried and environmental management systems are in place before construction starts, or suggest corrective actions to ensure that all requirements are met.

**Table 2: Project Readiness Assessment Indicators**

Indicator	Criteria	Assessment	
EMP update	<ul style="list-style-type: none"> <li>The EMP was updated after detailed design, and approved by ADB and MNET (if relevant)</li> </ul>	Yes	No
Compliance with loan covenants	<ul style="list-style-type: none"> <li>The borrower complies with loan covenants related to project design and environmental management planning</li> </ul>	Yes	No
Public involvement effectiveness	<ul style="list-style-type: none"> <li>The completion and agreements to resettlement plans before the construction</li> </ul>	Yes	No
	<ul style="list-style-type: none"> <li>Appropriate rounds of public consultation completed</li> </ul>	Yes	No
	<ul style="list-style-type: none"> <li>GRM established with entry points and PPCU</li> </ul>	Yes	No
Environmental Supervision in place	<ul style="list-style-type: none"> <li>Safeguards Unit established within PMU</li> </ul>	Yes	No
Bidding documents and contracts with environmental safeguards	<ul style="list-style-type: none"> <li>Bidding documents and contracts incorporating the environmental activities and safeguards listed as loan assurances</li> </ul>	Yes	No
	<ul style="list-style-type: none"> <li>Bidding documents and contracts incorporating the impact mitigation and environmental management provisions of the EMP</li> </ul>	Yes	No
Contractor readiness	<ul style="list-style-type: none"> <li>Environmental, Health and Safety Management Plan (EHSMP) established for construction sites</li> </ul>	Yes	No
	<ul style="list-style-type: none"> <li>Environment, Health and Safety Officers appointed</li> </ul>	Yes	No
	<ul style="list-style-type: none"> <li>Assessment of potential disruption to utilities services conducted</li> </ul>	Yes	No
	<ul style="list-style-type: none"> <li>Stakeholder interviews to confirm issues if services are disrupted</li> </ul>	Yes	No
	<ul style="list-style-type: none"> <li>Site condition report for heritage site within project area</li> </ul>	Yes	No
EMP financial support	<ul style="list-style-type: none"> <li>The required funds have been set aside to support the EMP implementation according to the financial plan.</li> </ul>	Yes	No
Baseline Water Monitoring	<ul style="list-style-type: none"> <li>Selbe River water quality monitoring conducted prior to construction</li> </ul>	Yes	No

Source: ADB Study Team

## APPENDIX 8 SAMPLE INSTITUTIONAL STRENGTHENING AND TRAINING PLAN

*The following Sample Plan was developed for the first tranche of the 39256-MON Urban Transport Development Project (category B).*

1. To ensure effective implementation of the EMP, the capacity of the PMU, Implementing Agencies and contractors' staff responsible for EMP implementation and supervision must be strengthened. All parties involved in implementing and supervising the EMP must have an understanding of the goals, methods, and practices of project environmental management. The project will address the lack of capacities and expertise in environmental management through (i) institutional strengthening, and (ii) training.

2. **Institutional strengthening.** The lack of capacities of the EA and PMU to coordinate environmental management will be resolved by establishing a Safeguards Unit under the PMU, comprising one environmental specialist and one resettlement specialist. The appointment of one national and one international environmental consultant under the loan implementation consultancy will further strengthen the EA's and PMU's environmental management and supervision capacities, and ensure compliance with ADB's Safeguard Policy Statement (SPS 2009). The outsourcing of periodic monitoring of surface water, air and noise to a licensed laboratory will ensure adherence to QA/QC standards. The obligation of contractors to hire external Environment, Health and Safety Officers (EHSO) and to establish Environmental, Health and Safety Management Plans (EHSMP) for construction sites will help ensuring community and occupational health and safety. The proposed institutional strengthening plan is presented in Table 1 **Table** . It is believed that these institutional strengthening measures, combined with clearly assigned responsibilities and roles, will allow adequate environmental management.

**Table 1: Proposed Institutional Strengthening Measures**

Target Agencies	Institutional strengthening measures	Timing
EA, IA, PMU	<ul style="list-style-type: none"> <li>Defining institutional arrangements for environmental management, monitoring, and supervision</li> <li>Defining positions and responsibilities</li> <li>Appointing and recruiting PMU-SU</li> </ul>	During project preparation
Licensed laboratory	<ul style="list-style-type: none"> <li>Recruiting and contracting licensed laboratory for environmental monitoring before, during and after construction</li> </ul>	Prior to project implementation
LIEC	<ul style="list-style-type: none"> <li>Recruiting and contracting one national and one international LIEC for environmental management, environmental training, EMP compliance review, and reporting</li> </ul>	Prior to project implementation
Contractors, EHSO	<ul style="list-style-type: none"> <li>Hire Environment, Health and Safety Officers for each construction site.</li> <li>Develop Environmental, Health and Safety Management Plans (EHSMP)</li> </ul>	Prior to project implementation

3. **Training.** The EA, PMU, IA and contractors will receive training in environmental management, environmental monitoring and supervision, mitigation planning, emergency

response, public consultation and Grievance Redress Mechanism, occupational and community health and safety, and other environmental management techniques. The training topics, methods, and estimated costs for Tranche 1 are described in Table 2.

4. Training will mainly be facilitated by the LIEC. International training specialists will be hired where needed and appropriate. A total budget of \$11,000 was earmarked for training activities related to environmental management.

5. Training format will include workshops and seminars. In particular, due to the prevalence of construction projects in the City, on-site training will be used extensively, giving staff firsthand experience on how to identify and correct adverse environmental impacts. Of particular importance for the project is to build confidence and expertise within the Roads Department, when dealing with contractors who are not adhering to the EMP. Training in this area will need to include the steps taken to address non-compliance and penalties that could be included in project contracts.

**Table 2: Training Program**

<b>Training Topic</b>	<b>Targeted Agencies</b>	<b>Timing</b>	<b>Duration, Costs</b>
Environmental Laws and Regulations, Best Environmental Management Practices	IA, PMU, PMU-SU, MNET, MUB-EPD, Contractors, EHSO	Prior to project implementation	1 day, \$1,000
EMP Implementation: Roles and Responsibilities, Monitoring, Supervision and Reporting Procedures	IA, PMU, PMU-SU, MNET, Contractors, EHSO	Prior to and during project implementation	2 x 1 day, \$2,000
Grievance Redress Mechanism: Roles and Responsibilities, Procedures	IA, PPCU, PMU, GRM Access Points, Contractors, EHSO	Prior to project implementation	1 day, \$1,000
Occupational and Community Health and Safety, Emergency Preparedness and Response	Contractors, EHSO, PMU-SU	Prior to and during project implementation	2 x 1 day, \$2,000
Pollution Control and Environmental Monitoring, Inspection and Reporting, Public Consultation	IA, PMU-SU, EHSO, Contractors	Prior to and during project implementation	2x 1 day, \$2,000
Contractor Engagement and Management, including EMP Enforcement	PMU-SU, PMU, IA	Prior to project implementation	1 day, \$1,000
Road safety for vehicles, pedestrians and road users including cyclists, traffic law enforcement	IA, local traffic police	During project implementation	2 days, \$2,000

## APPENDIX 9 SAMPLE EMP BUDGET TEMPLATE

**Table 1: Sample EMP Budget Template**

Items	Cost	Lead Agency	Description
<b>1. Environmental Mitigation Measures</b>			
e.g. Water Pollution Control		e.g. Local Health and Sanitation Department	e.g. Fees for provision of temporary toilets and sewage collection and disposal for worker camp
Other			
<b>2. Environmental Monitoring</b>			
Mitigation Compliance Inspections		e.g. Independent Research Center	e.g. Cost for undertaking site visits, preparing monitoring reports
Point Source Emission Monitoring			
Ambient Monitoring			
Other			
<b>3. Capacity Building, Other</b>			
Mitigation Design		e.g. Design Institute	e.g. Ecological and other surveys, detailed mitigation design and planning
Training and Capacity Building			
Other			
<b>4. Contingency</b>			
<b>5. Total</b>			

## APPENDIX 10 SAMPLE CONSULTATION RECORD

Consultation Participants (meeting, focus group, discussion)

Consultation Location:			
Consultation Date:			
Purpose of Consultation:			
Name and Position of Facilitator:			
Name of Participant	Organization / Occupation	Address / Location of Residence	Gender
{name}	{Teacher & Resident}	{13 <sup>th</sup> Khoroo}	F
{name}	{Unemployed, Resident}	{13 <sup>th</sup> Khoroo}	M

Consultation Record (meeting, focus group, discussion)

Key Issues Discussed	
Issue	Proponent
{Concerns over access to communal water resources during construction}	{supported by 5 residents and two NGOs from 14th Khoroo}
{Cultural heritage sites are important in this area and access to the sites at religious festival times is critical. This is part of the traditions in the Khoroo.}	{supported by the majority of residents and 2 representatives from the Temple}
Actions Identified	
Action & Deadline	Responsible Organization
{MUB will confirm how access to water will be maintained by 29 <sup>th</sup> .June.}	{PMU Deputy Mr/Ms ***}
Additional Comments	

Consultation Record (Through local media)

Approach & Date	Feedback	Feedback from & Date	Action (if needed)
{media campaign on the Project and impact on community health and safety 1-10 <sup>th</sup> July}	{concern that some areas of the community will not be able to access this media campaign}	{Local NGO, 6th July}	{MUB to contract Khoroo Governors for outreach messages by 21 <sup>st</sup> July}

## APPENDIX 11      GRIEVANCE REDRESS MECHANISM ESTABLISHED FOR TRANCHE 1

1. In consultation with the project EA, the IAs, and potentially affected people, it is agreed that the EA will establish a Project Public Complaints Unit (PPCU) in the PMU's office. The PPCU will deal with environment related complaints. The PPCU will be headed by the Deputy Governor for MUB in charge of the Environment Department. The Safeguard Unit (consisting of at least one environmental and social specialist) established within the PMU will be the PPCU Deputy. The PPCU (Table 1) will also include the following members, not all of which will need to be involved for every complaint:

**Table 1: Project Public Complaints Unit Members**

Organization	Function/Specialty
MUB Deputy Governor	Head of PPCU
PMU Safeguards Unit	Deputy Head of PPCU
<i>Khoroo</i> Administration Representative	Local Access Point
MNET Officer	Environmental Specialist
Women's Union NGO	Gender Specialist
Ministry of Labor & Social Security Officer	Advice on Social and Labor Issues for Affected People
MUB Road Department Officer	Project Understanding and Road Engineering
Land Authority of City	Land Ownership and Disputes
Mongolian Chamber of Commerce Policy & Representative,	Business Issues and Barriers to Businesses

*Source: Study Team*

2. It is anticipated that the general issues addressed by the PPCU will be managed by the PPCU Deputy, i.e. the PMU Safeguards Unit. The Deputy will liaise with the relevant specialists depending on the issue arising. The Head of PPCU will be kept informed and contribute when issues need to be resolved. The potential range of issues could be wide including any number of environmental and social issues, therefore PPCU members represent a range of view points and variety of expertise with which to serve stakeholders potentially affected by the project.

3. **GRM entry points.** In analogy to the well-established and well-understood system to resolve land disputes, the main entry point of the GRM will be the *Khoroo* administration, which will directly forward the complaints to the PPCU. Alternatively, complaints can also be directly addressed to the PPCU.

4. Organizational charts of the GRM, including the contact persons of the entry points and the PPCU, will be disclosed at every construction site. Phone numbers, addresses, and email addresses of all access points and the PPCU will be disclosed to the public through MUB's website (<http://www.ulaanbaatar.mn/>).



### Types of Grievances Expected and Eligibility Assessment

5. Public grievances addressed by the GRM are likely to relate to resettlement and environmental issues during the construction phase, as consultations with potentially affected people conducted during project preparation confirmed their basic support to the project. Construction-related grievances can be numerous, and managing them is the contractor's responsibility under its contract with the EA or the IAs. Grievances may include:

- *Damage to public roads due to heavy vehicle operation and transportation of heavy equipment and materials;*
- *Dust, smoke or odor emissions;*
- *Excessive traffic congestion;*
- *Construction noise and vibration;*
- *Damage to private premises;*
- *Concerns over safety measures for the protection of the general public and construction workers;*
- *Excessive soil erosion;*
- *Poor disposal of waste materials;*
- *Loss of income;*
- *Loss of vegetation;*

6. Once a complaint is received and filed, the PPCU will identify if complaints are eligible. Eligible complaints include those where (i) the complaint pertains to the project; and (ii) the issues raised in the complaint fall within the scope of the issues that the GRM is authorized to address. Ineligible complaints include those where: (i) the complaint is clearly not project-related; (ii) the nature of the issue is outside the mandate of the GRM (such as issues related to allegations of fraud or corruption); and (iii) other company or community procedures are more appropriate to address the issue. If the complaint is rejected, the complainant is informed of the decision and the reasons for rejection.

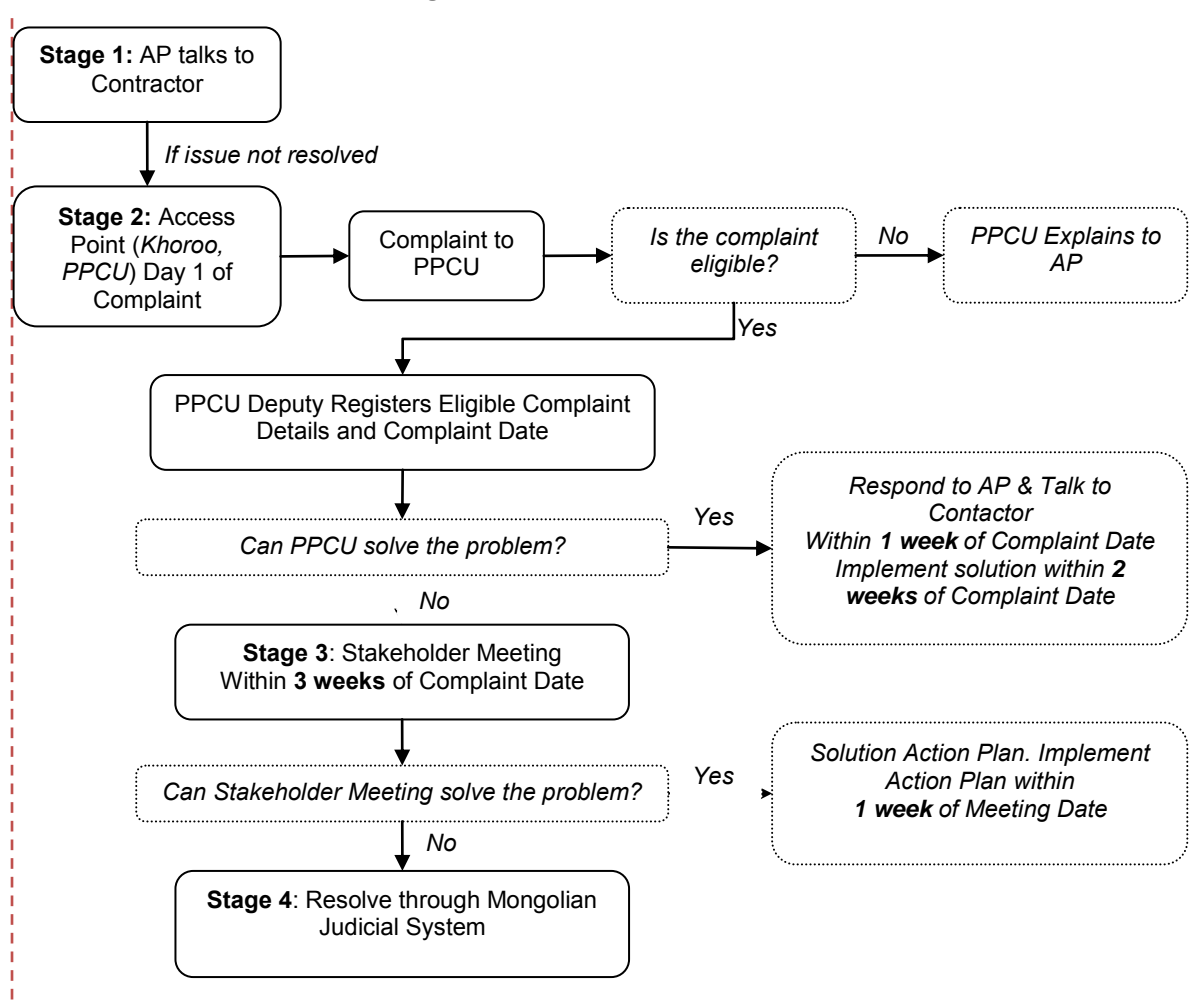
### GRM Steps and Timeframe

7. Procedures and timeframes for the GRM are given in Figure 1. The GRM has 5 key stages:

- i) **Stage 1:** If a concern arises, the affected person (AP) tries to resolve the issue of concern directly with the contractor/operator;
- ii) **Stage 2:** If no solution can be found in Stage 1, the AP will submit an oral or written complaint to the GRM Access Points (PPCU or *Khoroo administration*). For an oral complaint, the *Khoroo administration* must properly make written records. The *Khoroo administration* notes the date of complaint and passes it immediately to the PPCU Deputy for action. The PPCU Deputy will then (i) assess the eligibility of the complaint, (ii) inform and consult ADB, (iii) consult relevant members of the PPCU to identify a solution, and (iv) give a clear reply within 1 week from the Complaint Date.
- iii) The reply will be *either* a solution following discussions with the AP, IA and contractor *or* Stage 3 will begin. If a solution is found, the contractors during construction and the IAs/operators during operation should implement the solution and convey the outcome to the PPCU within 1 week of the solution being identified. This means if the PPCU finds a solution, it will be implemented within 2 weeks (10 working days) from the date of complaint, allowing time for the contractor or operator to install or purchase any additional mitigation materials/equipment;

- iv) **Stage 3:** If no solution can be identified by the PPCU or if the AP is not satisfied with the suggested solution in Stage 2, the PPCU Deputy will organize a multi-stakeholder meeting to be held within three weeks of the Complaint Date. All members of the PPCU and relevant external stakeholders will be invited. The PPCU will consult ADB's project team. The meeting should result in a solution acceptable to all, and identify responsibilities and an action plan. The contractors during construction and the IAs/operators during operation should implement the agreed solution and convey the outcome to the PPCU within one week, which will be four weeks after the Complaint Date;
- v) **Stage 4:** If the AP is still not satisfied with the reply in Stage 4, she/he can go through local judicial proceedings.
8. The PPCU shall accept the complaints and grievances lodged by the AP free of charge. Any costs incurred should be covered by the contingency of the project. Throughout the duration of project implementation and the first three years of operation, these grievance procedures remain valid so that any affected person may deal with relevant issues

Figure 1: GRM Process



## APPENDIX 12      TEMPLATE ENVIRONMENTAL MONITORING AND PROGRESS REPORT (EMPR)

**Guidelines:** Following requirements of the ADB Safeguard Policy Statement (2009) and the *Operations Manual* section on safeguard policy (OM F1), borrowers/clients are required to establish and maintain procedures to monitor the status of implementation of safeguard plans and ensure progress is made toward the desired outcomes. Borrowers/clients are required to submit the following monitoring reports for ADB review:

<b>Project Category</b>	<b>Frequency of Reports</b>
Environment category A	<ul style="list-style-type: none"> <li>• Semi-annual monitoring reports during project construction</li> <li>• Annual monitoring reports during project operation</li> </ul>
Environment category B	<ul style="list-style-type: none"> <li>• Yearly monitoring reports</li> </ul>
Highly complex and sensitive deemed by ADB	<ul style="list-style-type: none"> <li>• Quarterly monitoring reports</li> </ul>

The level of detail and comprehensiveness of a monitoring report is commensurate with the complexity and significance of social and environmental impacts. The following structure should be followed:

### Suggested Report Structure

1.      **Introduction**
  - 1.1. Report Purpose
  - 1.2. Project Implementation Progress
2.      **Incorporation of Environmental Requirements into Project Contractual Arrangements**

Manner by which EMP requirements are incorporated into contractual arrangements, such as with contractors or other parties.
3.      **Summary of Environmental Mitigations and Compensation Measures Implemented**

Based on EMP; may include measures related to air quality, water quality, noise quality, pollution prevention, biodiversity and natural resources, health and safety, physical cultural resources, capacity building, and others.
4.      **Summary of Environmental Monitoring**
  - 4.1. Compliance Inspections (if relevant)
    - 4.1.1. Summary of Inspection Activities

- 4.1.2. Mitigation Compliance<sup>7</sup>
- 4.1.3. Mitigation Effectiveness<sup>8</sup>

#### 4.2. Emission Discharge (Source) Monitoring Program (if relevant)

- 4.2.1. Summary of Monitoring
- 4.2.2. Results
- 4.2.3. Assessment<sup>9</sup>

#### 4.3. Ambient Monitoring Program (if relevant)

- 4.3.1. Summary of Monitoring
- 4.3.2. Results
- 4.3.3. Assessment<sup>10</sup>

### 5. Key Environmental Issues

- 5.1.1. Key Issues Identified
- 5.1.2. Action Taken
- 5.1.3. Additional Action Required

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<sup>7</sup> Overall compliance with mitigation implementation requirements could be described in qualitative terms or be evaluated based on a ranking system, such as the following:

- 1. Very Good (all required mitigations implemented)
- 2. Good (the majority of required mitigations implemented)
- 3. Fair (some mitigations implemented)
- 4. Poor (few mitigations implemented)
- 5. Very Poor (very few or no mitigations implemented)

Additional explanatory comments should be provided as necessary.

<sup>8</sup> Effectiveness of mitigation implementation could be described in qualitative terms or be evaluated based on a ranking system, such as the following:

- 1. Very Good (mitigations are fully effective)
- 2. Good (mitigations are generally effective)
- 3. Fair (mitigations are partially effective)
- 4. Poor (mitigations are generally ineffective)
- 5. Very Poor (mitigations are completely ineffective)

Additional explanatory comments should be provided as necessary.

<sup>9</sup> Discharge levels should be compared to the relevant discharge standards and/or performance indicators noted in the EMP. Any exceedences should be highlighted for attention and follow-up. In addition, discharge levels could be compared to baseline conditions (if baseline data is available) and described in qualitative terms or be evaluated based on a ranking system, such as the following:

- 1. Very Good (overall conditions are generally improved)
- 2. Good (conditions are maintained or slightly improved)
- 3. Fair (conditions are unchanged)
- 4. Poor (conditions are moderately degraded)
- 5. Very Poor (conditions are significantly degraded)

Additional explanatory comments should be provided as necessary.

<sup>10</sup> Ambient environmental conditions should be compared to the relevant ambient standards and/or performance indicators noted in the EMP. Any exceedences should be highlighted for attention and follow-up. In addition, ambient environmental conditions could be compared to the baseline conditions (if baseline data is available) and described in qualitative terms or be evaluated based on a ranking system, such as the following:

- 1. Very Good (overall conditions are generally improved)
- 2. Good (conditions are maintained or slightly improved)
- 3. Fair (conditions are unchanged)
- 4. Poor (conditions are moderately degraded)
- 5. Very Poor (conditions are significantly degraded)

Additional explanatory comments should be provided as necessary.

## **6. Conclusion**

6.1. Overall Progress of Implementation of Environmental Management Measures<sup>11</sup>

6.2. Problems Identified and Actions Recommended

### **Appendices**

1. Site Inspection / Monitoring Reports
2. Ambient Monitoring Results
3. Photographs
4. Others

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<sup>11</sup> Overall sector environmental management progress could be described in qualitative terms or be evaluated based on a ranking system, such as the following:

1. Very Good
2. Good
3. Fair
4. Poor
5. Very Poor

Additional explanatory comments should be provided as necessary.