ASIAN INFRASTRUCTURE INVESTMENT BANK

ФЕДЕРАЛЬНОЕ ДОРОЖНОЕ АГЕНТСТВО РОСАВТОДОР

Initial Environmental and Social Management Planning Framework for Public Disclosure

Project of Road Modernization in the Russian Federation

November 11, 2019

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CONTENTS

Acronyms and Abbreviations

Name	Description
AIIB	Asian Infrastructure Investment Bank
AoI	Area of influence
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLE	Critical level
CMT	Culturally Modified Tree
EHS	Environment, Health and Safety
EOO	Extent of occurrence
EPA	Environmental Protection Agency
EPC	Engineering Procurement and Construction
EPFIs	Equator Principle Financial Institutions
EPs	Equator Principles
ERP	Emergency Response Plan
E&S	Environmental and Social
ESA	Environmental and Social Assessment
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMPF	Environmental and Social Management Planning Framework
ESMS	Environmental and Social Management System
ESP	Environmental and Social Policy
ESS	Environmental and Social Standards
EU	European Union
FI	Financial Intermediary
GHG	Greenhouse Gas
GIIP	Good International Industry Practice
GRM	Grievance Redress Mechanism
HSES	Health, Safety, Environment and Social
IA	Impact Assessment
ICAHM	International Committee for the Management of Archaeological Heritage
IFC	International Finance Corporation
ILO	International Labor Organization
IMO	International Maritime Organization
IP	Indigenous peoples
IPP	Indigenous Peoples Plan
IPPF	Indigenous Peoples Plan Framework
IUCN	International Union for Conservation of Nature
KPIs	Key performance indicators
LARP	Land Acquisition and Resettlement Plan
MARPOL	International Convention for the Prevention of Pollution from Ships
MOU	Memorandum of Understanding
MPCs	Maximum permissible concentrations
NGO	Non-governmental organization
OECD	Organisation for Economic Co-operation and Development
OHS	Occupational Health and Safety

Name	Description
PCB	Polychlorinated biphenyl
PIA	Project implementing agency
PIU	Project Implementation Unit
PPM	Project-Affected People's Mechanism
PS	Performance Standards
RAP	Resettlement Action Plan
RF	Russian Federation
RMF	Road Management Facility
RoW	Right of way
RPF	Resettlement Planning Framework
SEP	Stakeholder Engagement Plan
SOLAS	International Convention for the Safety of Life at Sea
SVI	Sensitivity / vulnerability / importance
TSEL	Tentative Safe Exposure Levels
UN	United Nations
UNECE	United Nations Economic Commission for Europe
UNESCO	United Nations Educational, Scientific and Cultural Organization
US	United States
WBG	World Bank Group
WC	Water closet
WHO	World Health Organization

1. LEGAL FRAMEWORK

1.1 Introduction

This document was prepared to support the implementation of roads upgrading ("the Project") by the Federal Road Agency Rosavtodor (further refers as Rosavtodor) and local Rosavtodor units.

This Environmental and Social Management Planning Framework (ESMPF) is developed in accordance with the requirements of Asian Infrastructure Investment Bank (AIIB).

The purpose of the ESMPF is to ensure that the sub-projects will be assessed and implemented in conformity not only with the relevant Russian Federation (RF) regulatory requirements but also with the ESP and applicable ESSs:

- Russian national laws, regulations and standards;
- Regional laws, regulations and standards;
- International treaties, conventions and agreements ratified by the Russian Federation;
- AIIB requirements.

The general approach implemented in the Project is to apply the most stringent standards in the case of the difference between international regulations and RF legislation. In most cases, RF national standards are more stringent than those of the EU and WHO, and thus will be used in the impact assessment procedure.

In some cases, the direct comparison between applicable standards is hampered by various reasons:

- Different averaging periods of air sampling;
- Different indicators/triggers (for example, chemical substances or pollutants);
- Different types of recipients, etc.

1.2 Applicable National Legal Requirements

This section outlines the general legal EHS requirements of the Russian Federation applicable to the Project.

The **Constitution of the Russian Federation** has the highest legal force in the country's system. Among other topics, it outlines basic environmental rights and obligations, which are manifested through in Federal laws and codes. The basic instruments enabling implementation of the Constitution, federal laws and codes are the country's by-laws, including decrees of the President and the Government, regulations of both federal and regional executive authorities etc., as these by-laws contain standards, rules and procedures, the compliance with which ensures that higher level regulatory documents are also implemented.

Since there are a very large number of by-laws that are directly or indirectly applicable to the Project, the list of regulatory documents in this section is not exhaustive and only includes the documents that set key limitations concerning environmental, health and social impacts of the Project.

This section covers general legal and regulatory requirements to environmental, safety and public health protection, as well as the requirements regulating the following activities and aspects:

- Development of design documentation;
- Environmental impact assessments and environmental expert reviews;

- Participation of the public in the decision-making process;
- Protection of environmental components (air, surface water, soil, etc.);
- Waste management;
- Protection of cultural heritage;
- Protection of indigenous peoples and traditional use of natural resources;
- Labor and working conditions;
- Industrial safety;
- Sanitary and epidemiological welfare of population.

1.2.1 General Environmental and Community Health Requirements

The following laws regulate environmental rights and obligations of individuals and legal entities, and outline general requirements to economic activities causing an environmental impact:

- **The Constitution of the Russian Federation**;
- Federal Law No. 7-FZ "**On Environmental Protection**" of 10 January 2002;
- Federal Law No. 52-FZ "**On Sanitary and Epidemiological Welfare of Population**" of 30 March 1999;
- Federal Law No. 68-FZ "**On Protection of Population and Territories against Natural and Technogenic Emergencies**" of 21 December 1994 ;
- Federal Law No.184-FZ "**On Technical Regulations**" of 27.12.2002.

1.2.2 Development and Contents of Design Documentation

Development and contents of design documentation, as well as engineering surveys are governed by the following regulations:

- **The Russian Urban Development Code** (Federal Law No. 190-FZ of 29 December 2004);
- Russian Government's Decree No. 87 "**On the structure of sections of design documentation and requirements to their contents**" of 16 February 2008;
- Russian Government's Decree No.145 "**On the state expert review of design documentation and results of engineering surveys**" of 5 March 2007;
- Code of Practice SP 11-102-97 "**Engineering and Environmental Surveys for Construction**".

1.2.3 The Environmental Review of Design Documentation and the Impact Assessment

Environmental impact assessment (OVOS) is a mandatory procedure for any activity if the corresponding design (or substantiating) documentation is subject to the state environmental review.

The following laws regulate the environmental review and impact assessment processes:

- Federal Law No.174-FZ **"On Environmental Review**" of 23 November 1995;

- Order No. 372 of 16 May 2000 of the State Environmental Committee "**On an environmental impact assessment of proposed economic and other activities in Russia**".

1.2.4 Participation of the Public in Significant Environmental Decision

The Constitution of the Russian Federation and the Russian environmental legislation secure the right of the public (citizens) to obtain timely, complete and accurate information about the condition of the environment, and the right to participate in environmental decision-making at all stages of an economic activity. These rights are reflected in the following legal and regulatory documents:

- **The Russian Constitution**;
- Federal Law No. 7-FZ "**On Environmental Protection**" of 10 January 2002;
- **The Russian Urban Development Code** (Federal Law No. 190-FZ of 29 December 2004);
- Federal Law No.174-FZ "**On Environmental Review**" of 23 November 1995;
- Order No. 372 of 16 May 2000 of the State Environmental Committee **"On an environmental impact assessment of proposed economic and other activities in Russia"**.

1.2.5 Protection of environmental components

1.2.5.1 Subsoil Protection

- Federal Law No. 2395-1 "**On Subsoil Resources**" of 21 February 1992;
- Decree No. 71 of 6 June 2003 of the Federal Committee for Mining and Industrial Supervision "**On the Approval of the Subsoil Protection Rules**";
- Regulations No. 3314-1 "**On the Subsoil Use Licensing Procedure**" (approved by the ruling of the Russian Supreme Court on 5 July 1992).

1.2.5.2 Soil and Land Protection

- **The Russian Land Code** (Federal Law No. 136-FZ of 25 October 2001);
- Sanitary regulations SanPiN 2.1.7.1287-03 "**Sanitary and Epidemiological Requirements to Soil Quality**", approved by Decree No. 53 of 17 April 2003of the Chief Sanitary Inspector);
- Health regulations GN 2.1.7.2041-06 "**Maximum Permissible Soil Concentrations (MPC) of Chemical Substances in Soils**", approved by Order No. 1 of 23 January 2006 of the Chief Sanitary Inspector;
- "**Basic Provisions for Land Reclamation, and Topsoil Removal, Conservation and Sustainable Use**" approved by Order No. 525/67 of the Ministry of Natural Resources and the Russian Federal Committee for Land Resources and Land Management of 22 December 1995.

1.2.5.3 Air Protection

- Federal Law No. 96-FZ **"On Air Protection"** of 04 May 1999;
- Sanitary regulations SanPiN 2.1.6.1032-01 **"Outdoor and Indoor Air; Sanitary Air Protection. Health Requirements to Air Quality in Residential Areas"** approved by Order No. 14 of 17 May 2001 of the Chief Sanitary Inspector;
- Health regulations GN 2.1.6.1338-03 **"Maximum Permissible Concentrations (MPC) of Pollutants in Residential Areas"** approved by Order No. 114 of 30 May 2003 of the Chief Sanitary Inspector;
- Russian Government's Decree No. 183 **"On Standards for Air Emissions of Pollutants and Adverse Physical Impacts on Atmospheric Air"** of 2 March 2000;
- Sanitary regulations SanPiN 2.2.1/2.1.1.1200-03 **"Sanitary Protection Zones (SPZ) and Sanitary Classification of Enterprises, Installations and other Facilities. Revised Version".**

1.2.5.4 Water Protection

- **The Russian Water Code** (Federal Law No. 74-FZ of 03 June 2006);
- Sanitary regulations SanPiN 2.1.4.1175-02 **"Requirements for Non-centralized Water Supply Sources. Sanitary Protection of Sources"** approved by Order No. 40 of 25 November 2002 of the Chief Sanitary Inspector;
- Health regulations GN 2.1.5.1315-03 **"Maximum Permissible Concentrations (MPC) of Chemicals in the Water of Water Bodies of Utility and Drinking / Recreational and Amenity Purposes"** and GN 2.1.5.2280-07 **"Supplements and Amendments No. 1" to GN 2.1.5.1315-03 "Maximum Permissible Concentrations (MPC) of Chemicals in the Water of Water Bodies of Utility and Drinking / Recreational and Amenity Purposes".**
- Order No. 20 **"On the Approval of Water Quality Standards in Fishery Water Bodies, including Standards for Maximum Permissible Concentrations of Pollutants in Fishery Water Bodies"** of 18 January 2010 of the Federal Fishery Agency;
- State standard GOST 17.1.3.06-82 **"Nature protection. Hydrosphere. General Requirements for Ground Water Protection";**
- Sanitary regulations SanPiN 2.1.4.1110-02 **"Protective Sanitary Zones of Water Supply Sources and Drinking Water Supply System"** (approved by the Chief Sanitary Inspector of the Russian Federation on 26 February 2002).

1.2.5.5 Forests and Biological Resources Protection

- **The Russian Forest Code** (Federal Law No. 200-FZ of 04 January 2006);
- Federal Law **"On Fauna"** No. 52-FZ of 24 April 1995;
- Federal Law **"On Fisheries and Conservation of Aquatic Biological Resources"** No. 166-FZ of 20 January 2004;
- Order No. 20 of 18 January 2010 **"On the Approval of Water Quality Standards in Fishery Water Bodies, including Standards for Maximum Permissible Concentrations of Pollutants in Fishery Water Bodies"** of the Federal Fishery Agency;
- Russian Government's Decree No. 997 of 13 July 1996 **"On the Approval of Requirements for the Prevention of Destruction of Wildlife Associated with Production Processes and Operation of Main Roads, Pipelines, Communication and Power Transmission Lines";**

- Federal Law No. 33-FZ **"On Specially Protected Natural Areas"** of 14 March 1995;
- Order No. 289 of 25 October 2005 **"On approval of lists (of lists) of objects of fauna listed in the Red book of the Russian Federation and excluded from the red book of the Russian Federation"** of Ministry of Natural Resources of the Russian Federation.

1.2.6 Waste Management

- Federal Law No. 89 **"On Industrial and Domestic Waste"** of 24 September 1998;
- Order No. 242 **"On approval of Federal classificatory catalogue of wastes"** of 22 May 2017 of Rosprirodnadzor;
- Federal Law No. 99-FZ **"On licensing of certain types of activities**" of 4 May 2011;
- Russian Government's Decree 1062 **"On licensing of activity on collection, transportation, processing, utilization, neutralization, disposal of waste I - IV hazard classes" (together with "Position about licensing of activity on collection, transportation, processing, utilization, neutralization, disposal of waste I - IV hazard classes")** of 3 October 2015;
- Order No. 721 **"On approval of accounting in the waste management"** of 1 September 2011 of the Ministry of Natural Resources.

1.2.7 Cultural Heritage Protection

- Federal Law No. 73-FZ **"On Cultural Heritage Sites (Cultural and Historical Monuments) of the Peoples of the Russian Federation"** of 25 June 2002.

1.2.8 Indigenous People and Traditional Use of Natural Resources

- Federal Law No. 82-FZ **"On Guaranteed Rights of Low Numbered Indigenous Peoples"**;
- Federal Law No. 49-FZ **"On Areas of Traditional Nature Uses by Indigenous Low-Numbered Peoples of the North, Siberia, and Far East"**.

1.2.9 Labor and Working Conditions

- **The Russian Labor Code** (Federal Law No. 197-FZ dated 30 December 2001);
- Federal Law No. 125-FZ **"On mandatory social insurance from accidents on manufacture and occupational diseases"** of 24 July 1998;
- Federal Law No.323-FZ **"On Backgrounds of Health Protection of the Citizens";**
- Federal Law No. 225-FZ **"On mandatory insurance of civil liability of a hazardous facility's owner for bringing harm as a result of an emergency at hazardous production facility"** of 27.07.2010;
- Sanitary and health regulations on the working environment and labour process, including:
    - GOST 12.1.036-81 **"Noise. Permissible noise levels for residential and public buildings";**

- SN 2.2.4/2.1.8.562-96 **"Noise at workplaces, in residential and public buildings and residential areas";**
- GN 2.2.5.1313-03 **"Maximum permissible concentrations (MPCs) of contaminants substances in the working zone";**
- GN 2.2.5.2308-07 **"Tentative Safe Exposure Levels (TSEL) of contaminants substances in the working zone";**
- **"Radiation Safety Norms"** (NRB-99) SanPiN 2.6.1.2523 – 09;
- SP 2.6.1.2612-10 **"Basic sanitary regulations for provision of radiation safety"** (OSPORB-99/2010)".

1.2.10 Industrial Safety

- Federal Law No. 116-FZ **"On Industrial Safety of Hazardous Production Facilities"** of 21 July 1997
- Federal Law No. 68-FZ **"On Protection of Population and Territories against Natural and Technogenic Emergencies"** of 21 December 1994;
- Federal Law No. 384-FZ **"Building and Structure Safety Technical Standards"** dated 30.12.2009;
- Federal Law No. 69-FZ **"On Fire Safety"** of 21.12.1994;
- Federal Law No. 3-FZ **"On Radiation Safety"** of 09.01.1996;
- Order No. 893 (RD -03-14-2005) **"On adoption of procedure for execution of industrial safety declaration of hazardous production facilities and list of data to be included in the above"** of 29 November 2005 of Rostekhnadzor.

1.2.11 Sanitary and Epidemiological Welfare of the Population

- Federal Law No. 52-FZ **"On Sanitary and Epidemiological Welfare of Population**" of 30 March 1999;
- Sanitary and health standards of the quality of the environment indicating welfare of population, including:
  - Sanitary regulations SanPiN 2.1.4.1074-01 **"Potable water. Hygienic requirements to the water quality in centralized potable water supply systems. Quality control";**
  - Sanitary regulations SanPiN 2.6.1.2800-10 **"Hygienic requirements for public exposure limitation due to natural sources of ionizing radiation"**.

1.3 International Conventions

International treaties and conventions signed and / or ratified by the Russian Federation and applicable to the Project.

1.3.1 Protection of the ozone layer:

- The Vienna Convention for the Protection of the Ozone Layer, 1985;

- The Montreal Protocol on Substances that Deplete the Ozone Layer (The Montreal Protocol), 1987.

1.3.2 Hazardous waste management:

- The Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal, 1989;
- The Stockholm Convention on Persistent Organic Pollutants, 2001.

1.3.3 Climate change and sustainable energy management:

- The Geneva Convention on Long-range Transboundary Air Pollution, 1979;
- United Nations (UN) Framework Convention on Climate Change, 1992;
- The Paris Agreement under the United Nations Framework Convention on Climate Change (The Paris Agreement), 2015.

1.3.4 Human environment, biodiversity and habitats:

- Convention on Wetlands of International Importance especially as Waterfowl Habitat (The Ramsar Convention), 1971;
- Declaration of the United Nations Conference on the Human Environment (The Stockholm Declaration), 1972;
- Convention on the Conservation of Migratory Species (the Bonn Convention), 1979;
- Convention on the Conservation of the European Wildlife and Natural Habitats (Bern Convention), 1979;
- UN World Charter for Nature, 1982;
- UN Convention on Biological Diversity (CBD) 1992.

1.3.5 Social issues / consultations:

- Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (The Aarhus Convention), 1998 – signed, but not ratified by the Russian Federation.

1.3.6 Labor and working conditions:

- International Labor Organization (ILO) Convention No. 97 “On Migrant Workers”, 1949;
- ILO Convention No. 121 “On benefits in cases of occupational injuries”, 1964;
- ILO Convention No. 122 “Employment Policy”, 1966
- ILO Convention No. 130 “On Medical Assistance and Sickness Benefits”, 1969;
- ILO Convention No. 142 ”Occupational orientation and occupational training for development of human resources”, 1977;

- ILO Convention No. 148 “Convention concerning the Protection of Workers against Occupational Hazards in the Working Environment Due to Air Pollution, Noise and Vibration”, 1977;
- ILO Convention No. 150 “Labor Administration Convention”, 1978;
- ILO Convention No. 155 “Occupational Safety and Health Convention”, 1981;
- ILO Convention No. 174 “On the Prevention of Major Industrial Accidents”, 1993;
- ILO Convention 182 “Worst Forms of Child Labor”, 1999;
- ILO Convention No. 187 “On the Fundamentals of Promoting Occupational Safety and Health”, 2006.

1.3.7 Transboundary impacts:

- United Nations Economic Commission for Europe (UNECE) Convention on Environmental Impact Assessment in a Transboundary Context (The Espoo Convention), 1991;
- UNECE Convention on the Transboundary Effects of Industrial Accidents, 1992;

1.3.8 Cultural heritage:

- United Nations Educational, Scientific and Cultural Organization (UNESCO) Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972;
- International Committee for the Management of Archaeological Heritage (ICAHM) Charter for the Protection and Management of the Archaeological Heritage, 1990;
- UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage, 2003;

1.3.9 Human rights:

- UN International Bill of Human Rights, 1966;
- Voluntary Principles on Security and Human Rights, 2000.

1.4 Applicable requirements of the Asian Infrastructure Investment Bank

1.4.1 Environmental and Social Framework (AIIB ESF)[1]

The objectives of the AIIB ESF are to:

- Reflect institutional aims to address environmental and social risks and impacts in Projects.
- Provide a robust structure for managing operational and reputational risks of the Bank and its shareholders in relation to Projects’ environmental and social risks and impacts.
- Ensure the environmental and social soundness and sustainability of Projects.
- Support integration of environmental and social aspects of Projects into the decision-making process by all parties.

[1] https://www.aiib.org/en/policies-strategies/_download/environment-framework/20160226043633542.pdf

- Provide a mechanism for addressing environmental and social risks and impacts in Project identification, preparation and implementation.
- Enable Clients to identify and manage environmental and social risks and impacts of Projects, including those of climate change.
- Provide a framework for public consultation and disclosure of environmental and social information in relation to Projects.
- Improve development effectiveness and impact to increase results on the ground, both short- and long-term.
- Support Clients, through Bank financing of Projects, to implement their obligations under national environmental and social legislation (including under international agreements adopted by the member) governing these Projects.
- Facilitate cooperation on environmental and social matters with development partners.

1.4.1.1 AIIB ESF Requirements

A. Screening and Categorization

The Bank screens and categorizes each proposed Project to determine the nature and level of the required environmental and social review, type of information disclosure and stakeholder engagement for the Project. The categorization takes into consideration the nature, location, sensitivity and scale of the Project, and is proportional to the significance of its potential environmental and social risks and impacts. As part of this process, the Bank also screens the Project to determine which of the ESSs applies. In cases where environmental and social assessment work may already have been carried out for the Project, the Bank reviews the work, and in consultation with the Client, determines whether any additional environmental or social work is required.

The Bank assigns each proposed Project to one of the following four categories:

- **Category A.** A Project is categorized A if it is likely to have significant adverse environmental and social impacts that are irreversible, cumulative, diverse or unprecedented.
- **Category B.** A Project is categorized B when: it has a limited number of potentially adverse environmental and social impacts; the impacts are not unprecedented; few if any of them are irreversible or cumulative; they are limited to the Project area; and can be successfully managed using good practice in an operational setting.
- **Category C.** A Project is categorized C when it is likely to have minimal or no adverse environmental and social impacts.
- **Category FI.** A Project is categorized FI if the financing structure involves the provision of funds to or through a financial intermediary (FI) for the Project, whereby the Bank delegates to the FI the decision-making on the use of the Bank funds, including the selection, appraisal, approval and monitoring of Bank-financed subprojects.

B. Environmental and Social Due Diligence

The Bank conducts environmental and social due diligence, as an integral element of its appraisal of the Project, and in a manner that is: (a) appropriate to the nature and scale of the Project; and (b) proportional to the level of the Project's potential environmental and social risks and impacts. This element of the appraisal supports decision-making by helping the Bank decide whether to finance the

Project and, if so, the manner in which it requires the Client to address environmental and social risks and impacts in the planning and implementation of the Project. The Bank's due diligence may involve both field-based and desk review, which may be supplemented by the use of independent consultants.

C. Environmental and Social Assessment

Generally, the Bank requires the Client to adopt an integrated approach to the process of assessment, given the complex interrelationships of environmental and social risks and impacts in both public- and private-sector Projects. However, the Bank recognizes that in some countries the legislation and procedures require separate environmental and social documents, making the preparation of an integrated environmental and social assessment difficult to achieve. In such cases, the Bank reviews the environmental and social documentation prepared by the Client to ensure that it provides for assessment of both environmental and social risks and impacts, as well as provisions for mitigation and monitoring.

D. Assessment Documentation and Instruments

The Bank ensures that the Client prepares appropriate environmental and social assessment documents. For Category A Projects, the ESIA report or other environmental and social assessment report includes an ESMP or ESMPF (or both). For Category B Projects, the Bank, in consultation with the Client, determines the appropriate environmental and social assessment documentation required on a case-by-case basis. The environmental and social assessment for a Category B Project is narrower in scope than that for a Category A Project. If the Bank determines that a Category B Project has limited impacts with well-known mitigation and monitoring measures, it may decide, in consultation with the Client that the only required environmental and social assessment document is an ESMP or ESMPF (or both, as applicable). In such case, potentially adverse environmental and social risks and impacts may be addressed by the use of recognized good management or pollution abatement practices.

E. Environmental and Social Management Plan (ESMP)

Once the Client has identified the Project's risks and impacts through the environmental and social assessment, the Bank requires it to develop the measures to manage and mitigate the impacts and reflect them in an ESMP, all as required under ESS 1. If the Client has inadequate capacity to carry out the ESMP, the Bank requires that the Project include activities to strengthen that capacity.

F. Environmental and Social Management Planning Framework (ESMPF)

The Bank requires the Client to use an ESMPF if:

- (a) the Project consists of a program or series of activities whose details are not yet identified at the time the Project is approved by the Bank; or
- (b) if the Bank authorizes the Client to use a phased approach in accordance with Section G below. The ESMPF includes, when applicable, an RPF and an IPPF.

The purpose of the ESMPF is to ensure that the activities will be assessed and implemented in conformity with the ESP and ESSs. It sets out the policies and procedures to assess and address:

- (a) Environmental and social risks and impacts of the activities;
- (b) Involuntary Resettlement that is likely to arise from such activities; and
- (c) Impacts on Indigenous Peoples that are likely to arise from such activities.

G. Special Circumstances

In exceptional circumstances, duly justified by the Client, the Bank may determine that the timing of the Client's environmental and social assessment of identified activities under the Project, and the timing of the Bank's environmental and social due diligence and the Client's environmental and social assessment, may follow a phased approach that takes place following the Bank's approval of the Project.

In making its determination, the Bank considers:

- (a) the proposed Project's overall risks, impacts and benefits;
- (b) an initial review of environmental and social implications of the Project; and
- (c) the Client's capacity, commitment and track record in managing environmental and social risks and impacts and to implement relevant national laws, the ESP and applicable ESSs.

H. Use of Country and Corporate Systems

The Bank may, if requested, decide to offer the Client (whether public or private) the option to use all or part of the Client's existing environmental and social management system for all or part of the Project, on the basis of the following:

- Review by the Bank of the Client's existing environmental and social management system relevant to the Project, including its scope and effectiveness, and a determination by the Bank that the relevant parts of this system are adequate to address the environmental and social risks and impacts of the Project in a manner materially consistent with the objectives of the ESP and relevant ESSs; and
- Review by the Bank of the performance of the Client's environmental and social management system proposed for use in the Project, and a determination by the Bank of the Client's ability to apply the system, and the system's capacity to enable the Project to achieve the desired environmental and social outcomes. An element of this review is an assessment of the Client's implementation practices, capacity and commitment.

I. Information Disclosure

The Bank requires the Client to ensure that relevant information about environmental and social risks and impacts of the Project is made available in the Project area in a timely and accessible manner, and in a form and language(s) understandable to the Project-affected people, other stakeholders and the general public, so they can provide meaningful inputs into the design and implementation of the Project. This documentation includes, as applicable, the following:

- Draft environmental and social assessment reports, ESMPs, ESMPFs, resettlement plans, RPFs, Indigenous Peoples plans and IPPFs, or other approved forms of documentation;
- Final or updated environmental and social assessment reports, ESMPs, ESMPFs, resettlement plans, RPFs, Indigenous Peoples plans and IPPFs, or other approved forms of documentation; and
- ESMPs, resettlement plans, Indigenous Peoples plans and monitoring reports required to be prepared by Clients during Project implementation under ESMPFs, RPFs, IPPFs, or other approved forms of documentation.

J. Consultation

The consultation covers Project design, mitigation and monitoring measures, sharing of development benefits and opportunities on a Project-specific basis, and implementation issues. The Bank requires the Client to engage in meaningful consultation10 with stakeholders during the Project's preparation and implementation phases, in a manner commensurate with the risks to, and impacts on, those affected by the Project.

K. Monitoring and Reporting

The Bank and the Client have complementary but distinct monitoring responsibilities. The extent of monitoring activities, including their scope and periodicity, is proportional to the Project's risks and impacts.

The Bank requires the Client to implement the Project in compliance with the ESMP or ESMPF (or both), and any resettlement plan or RPF and any Indigenous Peoples plan or IPPF, and to furnish the Bank with periodic monitoring reports on the Client's performance under the Project, including FI subprojects, relating to environmental and social risks and impacts.

The Bank reviews Project performance against the Client's obligations set forth in the legal agreement governing the Project. Monitoring and supervision of environmental and social aspects of the Project are integrated into the Bank's supervision plan for the Project.

L. Grievances

The Bank requires the Client to establish, in accordance with the ESP and applicable ESSs, a suitable grievance mechanism to receive and facilitate resolution of the concerns or complaints of people who believe they have been adversely affected by the Project's environmental or social impacts, and to inform Project affected people of its availability. The grievance mechanism is scaled to the risks and impacts of the Project.

1.4.1.2 Environmental and Social Standards (ESS)

Three associated mandatory ESSs set out more detailed environmental and social requirements relating to the following:

ESS title	Objectives
ESS 1: Environmental and Social Assessment and Management	To ensure the environmental and social soundness and sustainability of Projects and to support the integration of environmental and social considerations into the Project decision-making process and implementation
ESS 2: Involuntary Resettlement	To avoid Involuntary Resettlement wherever possible; to minimize Involuntary Resettlement by exploring Project alternatives; where avoidance of Involuntary Resettlement is not feasible, to enhance, or at least restore, the livelihoods of all displaced persons in real terms relative to pre-Project levels; to improve the overall socioeconomic status of the displaced poor and other vulnerable groups; and to conceive and implement resettlement activities as sustainable development programs, providing sufficient resources to enable the persons displaced by the Project to share in Project benefits
ESS 3: Indigenous Peoples	To design and implement Projects in a way that fosters full respect for Indigenous Peoples' identity, dignity, human rights, economies and cultures, as defined by the Indigenous Peoples themselves, so that they: (a) receive culturally appropriate social and economic benefits; (b) do not suffer adverse

ESS title	Objectives
	impacts as a result of Projects; and (c) can participate actively in Projects that affect them

1.4.1.3 Environmental and Social Exclusion List

The list of Projects unacceptable to the Bank includes, but is not limited to:

- Forced labor or harmful or exploitative forms of child labor;
- The production of, or trade in, any product or activity deemed illegal under national laws or regulations of the country in which the Project is located, or international conventions and agreements, or subject to international phase out or bans;
- Activities prohibited by legislation of the country in which the Project is located or by international conventions relating to the protection of biodiversity resources or cultural resources, such as, Bonn Convention, Ramsar Convention, World Heritage Convention and Convention on Biological Diversity.

2. TYPOLOGY AND ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

2.1 Impacts during design and survey works

Selection of construction sites for road and infrastructure facilities, as well as the process of design and survey works, may create risks of adverse impacts on environmental and social components. This may be caused by an insufficient analysis of optimal locations for project sites or project alternatives. Existence of significant planning limitations at project sites may significantly hinder the construction and operation phases and necessitate expensive mitigation measures.

The risk-creating factors are listed below:

- Proximity of existing residential areas;
- Presence of valuable agricultural lands;
- Presence of water bodies and their associated protection zones;
- Presence of protected sources of surface and underground water supply;
- Presence of critical habitats[2] (including specially protected natural territories).

The negative factors of design and survey works include the following:

- Clearing of vegetation and degradation of the soil cover during geodetic surveys;
- Disturbance of the geological environment following exploration drilling and excavation;
- Air emissions and noise from operating machinery;
- Disturbance of animals by survey teams.

2.2 Environmental impacts during the construction phase

The construction phase will involve various activities, most of which are shown below for two main types of facilities – linear sections of the road and crossing points (junctions, overpasses):

- Clearance of vegetation from the permanent and temporary right-of-way; disposal of felling residue;
- Preparatory works (relocation of existing utilities, erection of construction camps, construction of temporary access roads, land grading, demolition of structures and other barriers within the right-of-way, construction of asphalt plants, concrete plants, commissioning of quarries);
- Construction of the earth roadbed (backfilling or excavation of soil, compaction of soil, roadbed and slope reinforcement);
- Installation of foundations of bridges and overpasses (piling, sheet pile fencing, excavation of pits, concreting);
- Installation of bridge frameworks;
- Construction of the road surface (filling and compaction of the crushed stone layer, bituminous grouting, asphalting, construction of roadsides);
- Construction of fencing, illumination, marking, steelwork welding and painting;
- Roadside landscaping.

[2] As per IFC PS6 and AIIB Environmental and Social Framework

2.2.1 Ambient air

Air emissions during construction activities will be associated with combustion (of felling residue and of fuel in furnaces of asphalt concrete plants), operation of internal combustion engines of power generators and vehicles, and with emissions of construction dust (including from operation of quarries of construction materials).

During construction of linear sections, the main sources of emissions will be bulldozers, graders, watering trucks, soil rollers and dump trucks. Construction of bridges and overpasses will also involve drilling machines, crawler cranes, excavators, concrete pumps, concrete mixers and vibratory dumpers. There will also be certain impact on ambient air from painting and welding.

At quarries, which will be supplying construction materials for the Project, emissions will be generated by operating machinery (hydraulic hammers, excavators, dump trucks, bulldozers), handling operations, crushing and screening units, and outdoor storage areas for raw materials.

At asphalt and concrete plants, the main impact on air will occur during intensive construction works, which should be the basis for the air pollution assessment[3].

Receptors will include residents of settlements in proximity to the proposed road. At the construction phase, receptors will also include people living near quarries, construction sites, asphalt and concrete plants, as well as workers in construction camps.

2.2.2 Noise and vibration

Construction-associated noise and vibration may also have a significant impact on sensitive receptors located in the immediate vicinity of project sites.

The main sources of noise impact match the sources of air impact as shown above in *Section 2.2.1*.

Most construction activities will generate different levels of vibration; however, the biggest vibration impacts will come from:

- Preparatory activities (demolition of structures and barriers; levelling);
- Construction of the roadbed (compaction);
- Installation of supports (installation of augered piles and sheet pile fencing);
- Construction of the road surface (filling and compaction of the crushed stone layer).

Also, noticeable vibration can be generated by hydraulic hammers and other equipment at quarries.

2.2.3 Geology and soils

Construction activities will involve removal of topsoil and replacement of weak soils following by backfilling of the roadbed with imported soils.
The soil will be used to construct the road bed, embankment slopes, and artificial structures (overpasses). During these processes, soil masses will be moved, and positive and occasionally negative landforms will be generated.
The following key impacts are anticipated at this stage:

- disturbance of natural bedding of soils and modification of the relief;
- development and intensification of adverse exogenous processes and phenomena (erosion);
- decrease of soil fertility;
- changes in the soils' water and thermal regime;

[3] Selection of areas for impact modelling should be based on the worst case scenario concept, which assumes simultaneous operation of main equipment and machinery at project sites.

- degradation of the soil quality due to pollution.

Changes in natural topography will impair the natural landscape and induce a series of impacts related to changes in slopes such as soil erosion, landslides and changes in drainage pattern and groundwater recharge. Waterlogging is also possible. Changes in the configuration of river channels and banks may cause incut of the channels and banks erosion respectively.
Construction works in river valleys, waterlogged areas and permafrost zones will increase the risk of exogenous processes.

2.2.4 Groundwater

Construction works will involve abstraction of water for technical, domestic and potable needs. Construction of new water abstraction stations may create a direct impact on local water reserves.

If a decision is made to modify river valleys (e.g. to straighten river channels), then significant impacts on the groundwater regime will become possible as shutting off the groundwater flow may create flooded zones, technogenic perched water streams, subsidence of land under load, and other adverse exogenous processes.

Potential impacts on the groundwater level may also be associated with development of quarries producing sand and gravel mix and other construction materials.

Another potential impact is association with ingress of contaminants into soils. The main pollutants will be represented by heavy metals, NOx, SOx, soot, oils, lubricants, cement, paints, construction chemicals etc.

2.2.5 Surface water

The construction phase is likely to impact the local hydrological conditions caused by redistribution of surface run-offs during preparation of construction sites and during earthworks at construction sites.

The main factors of hydrological impacts will be:

- Interception and diversion of surface run-offs from construction sites;
- Changing direction and flow of run-offs due to over-compaction of soils and creation of artificial structures;
- Increasing the flow (current velocity) of watercourses and downstream sedimentation due to changes in the configuration of river beds and banks.

Removal of topsoil at construction sites, construction of the road embankment, digging of trenches, mining of construction materials, traffic of construction machinery will disturb the soil and vegetation cover within the RoW including within water protection zones. This may intensify exogenous erosion processes in river valleys and elsewhere, and may cause migration of soil particles into waterways with surface run-offs, increase turbidity of water and result in silting of water bodies. Turbidity of rivers is likely to also increase during construction of bridges and culverts, straightening of river channels etc.

2.2.6 Biodiversity

2.2.6.1 Loss and fragmentation of terrestrial habitats

The main construction activities, which will also cause fragmentation and loss of habitats, are shown below:

- Removal of soil and vegetation cover and earthworks in the road corridor;
- Development of quarries.

Creation and operation of construction camps, storage areas for equipment and materials, and development and operation of quarries will cause further loss of habitats.

Vegetation clearance typically causes direct loss or shrinkage of existing habitats.

Linear sections of road result in fragmentation and isolation of certain parts of habitats, and will disrupt vegetative and seed propagation of plants, as well as migration and movement of animals. Fragmentation and isolation may also affect feeding opportunities for animals and weaken habitats' protection capabilities.

2.2.6.2 Loss of flora and fauna (individual representatives and populations)

Loss of flora and fauna means both loss of individual representatives or whole populations of one or a group of species in a certain area as a result of direct or indirect impacts.

This impact will mainly be associated with clearance of vegetation within the road corridor.

The impact of construction works on fauna and animal populations will be variable and will primarily depend on the ability of different environmental groups of animals to move around the area quickly and extensively.

- Small fauna (i.e. amphibians, reptiles, invertebrates, small mammals) have a lower level of mobility and therefore cannot avoid easily the Project activities. Therefore, probability of the loss of these fauna during vegetation clearance and earth-moving works is high.
- Large and medium size mammals, with a higher level of mobility, will migrate to other areas. Thus probability of the loss of these fauna during vegetation clearance and earth-moving works is negligible.
- In the case of the birds, their mobility is even higher, due to their capacity to fly. Therefore, incidents during the vegetation clearance resulting in loss of birds are not expected. However, in the case of ground nesting birds, vegetation clearance could result in loss of nests, eggs and chicks, if the clearance is conducted during the breeding season

Fauna and flora loss may also be caused by burning of grass and fires. Russian legislation (Federal Law No 69-FZ "On fire safety" dated 21 December 1994) dictates compliance with fire safety regulations at construction areas.

2.2.6.3 Degradation of terrestrial habitats

Disturbance to or degradation of terrestrial habitats and subsequent suppression of flora and fauna during the construction phase will be caused by 1) changes in quality of ambient air and water; 2) increased noise and vibration levels; and 3) disturbance of soil and geomorphological conditions within the RoW.

Degradation of terrestrial habitats may be caused by different construction activities such as:

- Soil excavations, which will generate increased levels of noise and vibration and affect the quality of ambient air and water;
- Construction and operation of borrow pits and quarries, which will generate increased levels of noise and vibration and affect the quality of ambient air and water;
- Construction of culverts, bridges and overpasses, which will generate increased levels of noise and vibration and affect the quality of ambient air and water;

- Presence / movement of construction machinery and vehicle during pre-construction and construction activities, which will generate increased levels of noise and vibration;
- Generation of waste;
- Excavations and construction and operation of borrow pits and quarries do not necessarily result in a direct loss of habitats but will most likely cause their disturbance (degradation). If disturbance of a habitat is high enough to prevent the habitat from its ability to maintain the original level of biodiversity, then regressive succession may occur, which will destroy the initial properties of such habitats.

Suppression of flora due to air pollution

Pollutants such as dust, NO_2, CO, CO_2 and others, which are emitted into the atmosphere from operating construction equipment, precipitate onto the surface of plants and then enter the their tissues and cells. This disrupts biochemical processes including photosynthesis and causes various phytopathologies.
Receptors of this type of impact also include habitats, the overall condition of which may worsen due to accumulation of pollutants.
As opposed to the loss of habitats, this impact may manifest across a much wider area. The impact radius will depend on air dispersion of contaminants. Typically, asphalt and concrete plants would be the biggest contributor to the pollution of ambient air.
In protection of vegetation and natural ecosystems, the international practice uses the concept of the critical level (CLE), which is defined as the concentration of a pollutant in the air above which direct adverse effects on individual plant species and ecosystems on the whole may occur. The critical level concept sets maximum permissible average annual and/or daily concentrations of sulphur dioxide and nitrogen oxide.

Suppression of fauna due to air pollution

Long-term accumulation of harmful and toxic substances in plants' tissues creates a whole range of additional implications: contaminated plants are eaten by animals, which also ingest the pollutants and become exposed to health issues. Also, suppression of vegetation may shrink the food resources for small mammals, herbivores and other groups of animals.
Water contaminated as a result of a spill of fuel or hazardous waste may kill animals that drink it. Mortality of this impact will depend on the amount of water ingested, the toxicity of the spilled substance, and the size of the animal receptor.

Disturbance of animals from noise, vibration and illumination

Disturbance or nuisance factors for animals are noise, vibration, light and the presence of people at construction sites. The intensity of these factors will increase during operations of construction machinery and vehicles at construction sites and on access roads.
The nuisance factor may affect a whole population and also individual animals. Flashes of light, loud sounds and other unusual phenomena disturb and scare animals. The frequent fear inevitably disrupts the animals' daytime living patterns as they are forced to abort their resting, feeding and hatching. Some animals leave traditional feeding grounds and shelters and leave for other areas.
Wild animals have a differing degree of susceptibility to the disturbance factor within their area of distribution, which is probably down to different species' inherent cautiousness and timidity. Generally, larger birds and animals are more susceptible to disturbance compared with other faunal groups. It should be also noted that most animals (amphibians, reptiles, small rodents and most passerine) can adapt to continuous noise and other disturbance factor provided their lives are not threatened.

2.2.6.4 Loss and degradation of aquatic habitats

The main construction activities that can affect aquatic habitats are as follows:

- Construction of bridge piers;
- Construction of culverts;
- Permanent or temporary straightening of river channels; modification of the bank zone's configuration.

These activities may shrink habitats of aquatic organisms including spawning, feeding and nursery areas, and also disturb habitats of benthos, which is a food resource for fish.

The same impacts may contribute to a subsequent downstream increase in the flow (current velocity) of rivers and sedimentation, which will inhibit migration of fish from lower to upper reaches of rivers and may thus cause a future significant reduction of biodiversity in the upper reaches.

Construction of bridges and culverts may increase turbidity of rivers, which will impair plankton habitats.

Relocation of channels may result in a long-term (albeit not permanent) increase in turbidity due to generation of suspended solids during excavation of a new channel and their wash-out. The turbidity plume may spread over considerable distances from the actual construction zone.

Degradation of freshwater ecosystems may also be caused by a drop in quality of water, which is typically caused by two main factors:

- An accidental spill of fuel or hazardous wastes affecting a water body: river, lake, creek etc. If a spill reaches a water body, it affects the whole freshwater system due to a direct impact of the spill-making chemicals or due to ingestion of contaminated organisms;
- Ingress of contaminated surface run-offs.

2.2.6.5 Introduction of alien species

Intentional or accidental introduction of alien, or non-native, species of flora and fauna into areas where they are not normally found can be a significant threat to biodiversity, since some alien species can become invasive, spreading rapidly and out-competing native species. The biggest exposure to invasive species is seen with secondary communities, disturbed and poorly maintained lands with synanthrophic vegetation. Linear infrastructures (such as roads), are one of the sources of the spread of alien plants (especially along uncultivated lands or where vegetation clearance has occurred).

Introduction of alien species may also be caused by delivery of construction materials or equipment or other goods from other regions and countries.

Furthermore, road improvements may facilitate the accessibility and subsequent deliberate introduction (i.e. planting alien trees for landscaping or forestry purpose) or accidental spread (e.g. seeds in the soil attached to vehicle tires) of exotic plants.

2.3 Environmental impacts during the operation phase

2.3.1 Ambient air

At the operation phase, air quality will be mainly affected by emissions from vehicular traffic along the new road. The magnitude of the impact will mainly depend on the following:

- Daily and hourly intensity of traffic;

- Category of the road and speed limits;
- Structure of vehicle flow (including the share of commercial transport);
- Average age and environmental class of vehicles.

In some cases, the effect may be positive on the regional scale. The Project may help reduce total pollution of air near existing roads by attracting some of the transit flows. This redistribution of traffic may reduce the number of traffic jams and road accidents.

2.3.2 Noise and vibration

The noise impact during the operation phase will be associated with vehicular traffic on the new road. The assessment of this impact should take into account the anticipated increment in traffic intensity. At the same time, the intensity of the impact may reduce somewhat by the time the road is commissioned as vehicles are becoming greener in terms of engines, aerodynamics, tires etc. This may partially offset the adverse effect.
Also to be considered are types of the road surface. For instance, a porous asphalt coating may reduce the noise from the traffic by 3-4 dB(A).
The noise impact assessment should emulate different scenarios based on day-time and night-time noise limits, and equivalent and maximum noise levels.

2.3.3 Geology and soils

The operation phase may be associated with changes in the water regime of soils and deterioration of their quality due to contamination. Other impacts, including the impacts on geological conditions and relief, are not expected on the condition that the Project-envisaged measures to rehabilitate disturbed areas and proper landscaping of the roadside and the road protection belt are implemented.

During the operation phase, oversaturation and waterlogging of soils will be caused by re-distribution of surface run-offs, change in the filtration capacity of soils, and discharge effluents onto the landscape.
The road embankment will act as a barrier and will prevent redistribution of water across a larger area diverting it to the roadside.
Potential soil contamination at areas adjacent to the road during the operational stage will be caused by vehicular emissions, the gaseous component of which will be dispersed into the air, or precipitate onto the ground to be quickly transformed in soil into organic compounds. Heavy metals from tyre or parts friction may accumulate in soil over a long period of time.
An additional source of potential soil pollution in the immediate proximity to roads may be created by the use of de-icing agents which will be carried beyond road shoulders due to heavy and fast traffic flow.
Pollutants are generally accumulated in the upper horizon of soils. Their downward migration will depend on the soils' water regime and oxidation-reduction conditions. This impact may increase soils' toxicity and reduce its quality.

2.3.4 Groundwater

The impact on the level of groundwater (mainly perched groundwater and shallow aquifers) will be associated with redistribution of the surface run-offs. The road embankment will act as a barrier and will prevent redistribution of water across a larger area diverting it to the roadside.
Also possible is the impact on the level of artesian aquifers, if the Project's design provides for abstraction of domestic and potable water for infrastructure facilities (RMF, refueling stations etc.).

The impact on groundwater will also be manifested in contamination of shallow aquifers. Vehicular traffic generates a large amount of harmful substances including heavy metals from combustion of fuel, oncogenic salts from tire wear, petroleum products, de-icing salts, which are washed from the road surface by atmospheric precipitation and contaminate soils, reservoirs and watercourses. The especially big impact comes from roadside stations (for refueling, servicing, inspection and washing of cars), which contaminate the environment with petroleum products and washing fluids.

2.3.5 Surface water

Surface water can be affected during operation by oils, tire particles, de-icing salt (mainly ammonium sulphate), soot, petroleum products, compounds of lead and other heavy metals, dust, paint and other substances, which may migrate with surface run-offs (storm water, melt water, wash water).

Also, refueling stations, car wash stations and RMF sites are potential sources of surface water contamination.

Melt and storm run-offs may be diverted into special reinforced concrete chutes and then into settlement pits for initial treatment. After settling, the run-offs will be discharged onto the ground outside the roadway. The treated water after discharge may then enter the nearest watercourses with surface, soil and subsurface run-offs.

2.3.6 Biodiversity

2.3.6.1 Degradation of terrestrial habitats

Suppression of vegetation due to changes in quality of air

At the operation stage, the main sources of impact on vegetation cover will be emissions from motor vehicles.
The air quality standards used in the international environmental practice are based on the impact on human health and the environment. These secondary air quality standards serve to protect vegetation, agricultural crops, domestic animals etc.
In protection of vegetation and natural ecosystems, the international practice uses the concept of the critical level (CLE), which is defined as the concentration of a pollutant in the air above which direct adverse effects on individual plant species and ecosystems on the whole may occur.

Suppression of vegetation due to changes in quality of soils and groundwater

The dispersion of de-icing chemicals outside the roadway can lead to soil salinization. The increase in total salinity leads to slower plant growth and morphological changes. However, it is expected that most of the chemicals will drain with the surface run-offs into wastewater storage pits.

Disturbance to fauna caused by negative changes in the quality of underground and surface water

Regular maintenance of vegetation within the road's right-of-way may involve the use of pesticides and herbicides that have the potential of causing disturbance to fauna species as well as surface water bodies in the vicinity of the areas where herbicides are used (due to their migration with storm run-offs).
If pesticides and herbicides are used, the Project will have to meet best industry practices.

Disturbance to animals caused by an increase in noise and vibration

The operation-phase levels of noise and vibration from the motorway will depend on the level of traffic. Taking into account attenuation of noise and vibration levels with distance, the disturbance is expected to occur only in the close proximity to the motorway. Because of this, the faunal species most sensitive to noise and vibration will avoid the area without further consequences.
It should also be noted that as noise will have a permanent nature, the animals visiting areas bordering the road will after sometime become used to vehicular noise. Another possible nuisance factor for animals will be associated with night-time illumination of some sections of the road (mainly, near residential areas).

Fragmentation and the barrier effect

Fragmentation of habitats typically occurs during the construction phase and may intensify during operation of the road.
Habitat fragmentation is mainly a product of habitat loss and involves isolation of one fragment of habitat to another, separation of a larger habitat into smaller fragments, increase in the edge to interior habitat size ratio, and decrease in the average size of remaining fragments.
Construction of motor roads contributes significantly towards the habitat fragmentation by creating barriers to fauna animal movement and the isolation of their populations.
The barrier effect created by such linear infrastructure facilities can affect the dispersion and movement capacity of the fauna. This affects indirectly their ability to find food, shelter or other individuals of their same species during the breeding season. These factors are linked with the species populations dynamic and can influence the survival of threatened species.
The barrier effect of a road will be linked with the traffic density, as it is shown in the table below (*Table 2.3-1*).

Table 2.3-1 Severity of the barrier effect of roads at different traffic intensity

Traffic intensity	Severity of the barrier effect
< 1,000 vehicles/day	Road will be passable for most wildlife species
1,000 – 4,000 vehicles/day	Road will be passable for some species but will be avoided by more sensitive species
4,000 – 10,000 vehicles/day	A strong barrier; noise and movement will repel many animals. Some fauna trying to cross the road will be run over.
> 10,000 vehicles/day	Impassable for most fauna species

2.3.6.2 Degradation of freshwater habitats / Suppression of freshwater organisms

A change (worsening) in the water quality may be caused by the following:

- An accidental spill of fuel or hazardous wastes affecting a water body: river, lake, creek etc.
- Ingress of contaminated surface run-offs;
- Disintegration of banks of straightened (relocated) channels.

The probability of occurrence of such events is sufficiently law provided general measures to prevent spills and discharges are put in place.

2.3.6.3 Death of animals due to road accidents

The presence of a motorway can result in the loss of some fauna, as a result of accidents when animals die while attempting to cross a road after getting run over by vehicles. According to a study

conducted in Bulgaria *(Nevena Kambourova-Ivanova et al. 2012*[4]), of the killed animals found on roads, 67.2% were amphibians, 15.7% were birds, 9.2% were mammals and 7.8% were reptiles. Amphibians therefore have the highest risk of a road death and the biggest exposure to this impact.

2.4 Project's exposure to the global climate change

During the operation phase, the road infrastructure may in the long run be exposed to consequences of the global climate change. These impacts should be assessed based on long-terms projections for this region.

The main potential impacts of the global climate change on road construction projects are given in the table below.

Table 2.4-1: Impact of climate change events on roads

Climate Change Events	Risks to the Road Infrastructure
Extreme rainfall events	■ Overtopping and wash away; ■ Increase of seepage and infiltration into pavement and subgrade; ■ Increase of hydrodynamic pressure of roads; ■ Decreased cohesion of soil compaction; ■ Traffic hindrance and safety;
Seasonal and annual average rainfall	■ Impact on soil moisture levels, affecting the structural integrity of roads, bridges and tunnels; ■ Adverse impact of standing water on the road base; ■ Risk of floods from runoff, landslides, slope failures and damage to roads if changes occur in the precipitation pattern;
Higher maximum temperature and higher number of consecutive hot days (heat waves)	■ Concerns regarding pavement integrity, e.g. softening of asphalt layers, traffic-related rutting, embrittlement (cracking), migration of liquid asphalt; ■ Thawing of permafrost solid resulting in subsiding structures and roads; ■ Thermal expansion in bridge expansion joints and paved surfaces; ■ Impact on landscaping; ■ Temperature break soil cohesion and increase dust volume which cause adverse health impacts and traffic accidents; ■ Melting of glaciers and risk of mudflows
Drought (Consecutive dry days)	■ Susceptibility to wildfires that threaten the transportation infrastructure directly; ■ Susceptibility to mudslides in areas deforested by wildfires; ■ Consolidation of the substructure with (unequal) settlement as a consequence; ■ More smog; ■ Unavailability of water for compaction work; ■ Drought decreases mortality of plants along road alignments;
Extreme wind speed	■ Threat to stability of bridges ■ Impact of wind borne debris on network/safety ■ Damage to signs, lighting fixtures and supports; ■ Increase of wind speed causes the dynamic force of water generated by waves on road embankments;
Foggy days	■ Traffic hindrance and safety; ■ More smog.

Source: Integrating Climate Change into Road Asset Management. World Bank Group Technical Report, 2017

[4] Effect of Traffic on Mortality of Amphibians, Reptiles, Birds and Mammals of Two Types of Roads Between Pazardzhik and Plovdiv Region (Bulgaria) – Preliminary Results.

2.5 Social impacts during the construction phase

2.5.1 Cultural heritage

Subproject-related activities may have an adverse impact on archaeological sites during construction of new sections of the road. Unless necessary preservation measures are put in place, construction activities may partially or completely destroy an archaeological site, including sites, which have earlier been discovered, and sites that will only be discovered during construction works.

The main construction activities that may damage or destroy cultural heritage sites are earthworks and associated operations, as well as movement of large construction machinery outside designated areas, vibration from piling operations and others.

The impact on cultural heritage will be limited to the new road section's temporary and permanent RoW (provided contractors restrict offsite traffic of machinery).

If new roads are built in areas inhabited or occupied by indigenous peoples (IP), then construction may affect such communities' cultural heritage sites like sacred areas, facilities of customary use that are part of the relevant people's culture etc.

2.5.2 Land acquisition

Construction of new sections of roads may require withdrawal of land plots from individuals and/or legal entities.

Under the AIIB's standards, any land acquisition within Subproject for category B compliance should aim to avoid any physical displacement; if unavoidable, the physical or economic displacement may only affect less than 50 households or less than 200 persons within the Subproject's area of influence. At the same time, the area of allocated lands should be less than 49% of the total land area used for the subproject. It is however expected that any resettlement within the Subproject will not be significant.

Nevertheless, acquisition of land plots may cause involuntary resettlement and/or economic displacement, an adverse impact on means of livelihood for specific persons / households or cause discontinuation of commercial activity, which in turn may be followed by retrenchment.

Receptors of acquisition-related impacts may include individuals and households, legal entities (agricultural organizations, trade and service firm, production companies and others).

In case of insufficient regulation and / or control, during the construction works, the sites and buildings closest to the construction sites may be affected / exposed to the risk of damage due to the movement of construction equipment, oil spills, etc.

2.5.3 Impact on commercial organizations

The impact on commercial organizations during the construction phase may be associated with the worsening in the business conditions caused by construction works.

Local commercial firms located in the immediate vicinity of construction sites may be exposed to elevated noise and dusting. The presence of workers and movement of construction machinery can also lead to a worsening in business conditions, while location of construction sites near commercial facilities may temporarily limited access to the latter. A combination of these effects may have a negative influence over retail and service businesses, which depend on a stable flow of customers, while the impact on other types of commercial organizations will be less pronounced.

Receptors of this impact will be commercial organizations located near construction sites.

2.5.4 Impact on road infrastructure and traffic

Building works, including construction of junctions, overpasses and exits, on or near municipal, regional and federal roads and nearby areas may significantly disrupt the traffic flow and cause heavy jams, especially during peak hours.

Transportation of personnel and cargoes for the Subproject may damage roads. Damage to local roads by traffic of heavy trucks to construction sites, accommodation camps or landfills will be the main factor of impact on the local road network. Deterioration of road infrastructure may adversely affect means of livelihood or quality of life, and – if improperly or untimely managed – may cause health-related issues (e.g. it may be impossible to use a road in an emergency etc.).

Receptors will be local residents who use the roads that will be used for the Subproject's construction phase, as well as other participants of the road traffic.

2.5.5 Impact on engineering infrastructure

Reconstructed and new sections of roads can cross engineering utilities, such as power lines and telecommunication lines, water pipelines, gas pipelines, etc.

Transferring of such utilities may be required for the construction, which may lead to a temporary inability to use them.

The recipients of the impact are the owners of utilities affected by the implementation of the Subproject.

2.5.6 Public health and Safety, Road Safety

Impacts on health and safety of the population are associated with deterioration of the quality of road infrastructure during construction, probable traffic accidents.

Deterioration of road infrastructure can lead to the adverse impacts affecting the quality of life of the local population (for example, the inability to drive on roads in an emergency, etc.), as well as reduced livelihoods.

The main sources of road safety risk are deployment of construction sites within existing roads; movement of construction machinery and workers near transport flows; and vehicular traffic for a Subproject (transportation of materials and personnel).

Risks to public health and safety during construction may be associated with road accidents involving construction equipment and vehicles of the Subproject, as well as vehicles moving along the reconstructed section of the road, pedestrians, as well as domestic and wild animals. In the context of impacts on safety, children and adolescents will be particularly sensitive to impacts, due to untrained for traffic rules, as well as people with limited mobility who have difficulty crossing unequipped construction sites.

In the absence of appropriate training, security personnel may abuse of their position and responsibilities in dealing with the local population and use excessive force in dealing with them /apprehend potential violators or other outsiders.

Impacts associated with increased noise levels and atmospheric pollution can lead to health risks for the population living in the immediate vicinity of the construction sites of the main and associated facilities of the Subproject, as well as routes for the transportation of personnel and goods. This kind of impact can be when development of quarries of construction materials used as associated objects

of the Subproject. At the end of their life, quarries can fill up with water and pose a risk to local communities.

The recipients of the impact are residents of settlements living near quarries of construction materials, transportation routes, as well as all road users. Increased noise levels and dust from construction work can have a more significant impact on the health of sensitive recipients.

2.5.7 Influx of rotational personnel

Implementation of infrastructure projects may require involvement of a larger number of employees including rotational workers.

Based on similar large infrastructure projects in Russia, in the case of attracting a large number of the staff and workers living in the construction camps, there is a risk of anti-social behavior of the staff (e.g. noisy behavior, hooliganism, alcohol abuse, brawls, socially unacceptable relations, gender violence, sexual exploitation and abuse etc.) between employees and/or between employees and local residents. This may cause outbreaks of sexually transmitted and social diseases, conflicts between employees and local communities, which may result in injury, deterioration of the living environmental in residential areas, security issues, social unrest and other consequences.

As motor roads planned for reconstruction may run next to or cross residential areas, interaction between employees and local residents may take place both during construction activities and on off-days.

The magnitude of the impact will primarily depend on the size of the workforce engaged for the construction phase, the duration of construction, personnel accommodation conditions, the development level of local settlements, and the size of population in these residential areas.

The Subprojects are unlikely to have any significant impact on local educational institutions, as most of the rotational staff will be coming to sites without their spouses and children.

The potential need for special medical treatment may increase the load on local healthcare institutions. If the condition of the local healthcare industry is poor (in terms of level of equipment or availability of medical staff, quality of diagnostic procedures etc.), even a small increase in the patient flow may create inconveniences for local residents.

An inflow of a large number of rotational workers may also trigger a surge in price for goods and services in nearby settlements.

2.5.8 Vulnerable groups and women

All of the above impacts will be more affected by vulnerable groups of the population. These groups usually include:

- Invalids,
- Poor households,
- Single-parent families, families raising disabled children,
- Families in a socially dangerous situation,
- Unemployed,
- Elderly, etc.

Depending on the nature of the impact and the type of vulnerability, recipients may require specific mitigation measures to be developed based on socio-economic surveys and consultations with affected communities.

It is not expected that the implementation of the Subproject will have in a greater impact on women (unless they are vulnerable or indigenous).

2.5.9 Indigenous peoples

The impact on the Affected Communities of Indigenous Peoples during the construction phase may be due to limited access to traditional natural resources or the loss of cohesion within traditional territories, which may lead to changes in the way of life, property rights and well-being of the indigenous peoples.

Reconstruction of existing roads can lead to changes in culturally appropriate practices of the Affected Communities of Indigenous People due to limited access to the places of ritual, or their loss.

2.6 Social impacts during the operation phase

2.6.1 Impact on commercial organizations

During operations, local commercial organizations may be associated with deterioration of business conditions due to noise levels and emissions from moving vehicles.

In addition, if the Subproject envisages construction of a new road section bypassing a residential area, where firms offering roadside services exist, such firms may be adversely affected as the diversion of traffic to the new section may reduce the flow of clients, i.e. profits.

2.6.2 Impact on road infrastructure and traffic

Modernisation of federal motorways will improve transport accessibility in the region for passenger and cargo transportation, and therefore boost the potential for the region's economic growth. Federal roads play an important role in creation of a single transport system by helping expand the market and resource coverage both within Russia and abroad.

Potential receptors of this impact are companies that use federal roads cargo transportation, as well as economically active persons, especially those living within the subproject's area of socioeconomic influence.

Despite the positive effect of modernisation of federal roads, if the number of exits and/or overpasses turns out to be insufficient, new roads can lead to deterioration of the access to the territories (which may also mean fragmentation of a settlement or agricultural field etc.). Deterioration of the access to the territories may negatively influence the quality of life of the affected persons and disrupt links between separated settlements. As mileage may potentially increase with commissioning of new roads, it will increase transport-related costs and may result in heavier traffic and jamming on specific parts of roads.

Receptors of the impact will be residents of settlements that may be separated by the new road; agricultural organisations whose fields may be fragmented by the new road; and other organisations that may be affected by excessive mileage or loss of access to certain territories.

2.6.3 Public Health and Safety, Road Safety

Reconstruction of existing roads will improve road safety and configuration, especially along new sections bypassing residential areas. Improving the quality of the roadway cover will help reduce dusting as well as reduce travel times, including for emergency services.

The degree to which road safety may be improved will depend on specific design solutions like installation of road fences that prevent accidental access of pedestrians and animals to the roadway; installation of fences between traffic flows, reducing the risk of head-on collisions in the event of an accident; the organization of safe pedestrian crossings, etc.

However, upgrading the road will increase traffic intensity, which in turn will increase the risk of accidents, and may also lead to health risks associated with increased emissions from fuel combustion and increased noise levels.

Potential road safety risks will be associated with scheduled repairs during the operation of the road. Risks will be associated with the need to ground the construction sites on the existing road, the movement of construction equipment and workers near the traffic flow, the narrowing of the roadway and the emergence of congestion.

Receptors will be local residents living near the reconstruction sites, and other road users.

2.6.4 Vulnerable groups and women

All of the above impacts will be applicable to members of the vulnerable groups, which will require the implementation of specific measures, which will be clarified based on the results of construction and consultations with affected communities.

Women are not expected to be more affected by the subproject (unless they are vulnerable or indigenous).

2.6.5 Indigenous peoples

At the operation stage, as well as at the construction stage, the impact on the affected communities of Indigenous peoples can be associated with limited access to traditional natural resources, deterioration of the connectivity of traditional territories, changes in implementation of the socio-cultural practices, which will entail changes in the way of life, property rights and well-being of the indigenous population.

The scope of mitigation measures will be supplemented, if necessary, based on the results of the implementation of the Indigenous Peoples Plan, the GRM, and meaningful consultations.

2.7 Labour and working conditions

The Rosavtodor should at all times take all reasonable precautions to maintain the health and safety of its workforce and of personnel employed by the Construction Contractor and other Sub-Contractors. In collaboration with local health authorities, the Rosavtodor should ensure that medical staff, first aid facilities, ambulatory care clinic and ambulance service are available at all times at the Site and at any accommodation for Rosavtodor's, Construction Contractor's and other Sub-Contractors' personnel, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.

The Rosavtodor should adopt and implement human resources policies and procedures appropriate to its size and workforce that set out its approach to managing workers consistent with the requirements of this ESMP.

The Rosavtodor should provide workers with documented information that is clear and understandable, regarding their rights under this ESMP and any applicable collective agreements, including their rights related to hours of work, wages, overtime, compensation, and benefits upon beginning the working relationship and when any material changes occur.

Where the Rosavtodor is a party to a collective bargaining agreement with a workers' organisation, such agreement will be respected. Where such agreements do not exist, or do not address working conditions and terms of employment, the Rosavtodor should provide reasonable working conditions and terms of employment.

Migrant workers should be engaged on substantially equivalent terms and conditions to other workers.

Workers' accommodation should provide basic services to workers and should be kept in a clean and sanitary state. Accommodation should be provided in a manner consistent with the principles of non-discrimination and equal opportunity. Workers' accommodation should not restrict workers' freedom of movement or of association.

The Rosavtodor should not discourage should not seek to influence or discourage workers' from electing worker representatives, forming or joining workers' organizations of their choosing, or from bargaining collectively, and should not discriminate or retaliate against workers who participate, or seek to participate, in such organizations and collective bargaining. The Rosavtodor should engage such workers' representatives and workers' organizations, and provide them with information needed for meaningful negotiation in a timely manner. Workers' organizations are expected to fairly represent the workers in the workforce.

The Rosavtodor should not make employment decisions on the basis of personal characteristics unrelated to inherent job requirements. The Rosavtodor should base the employment relationship on the principle of equal opportunity and fair treatment, and should not discriminate with respect to any aspects of the employment relationship, such as recruiting and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices. The Rosavtodor should take measures to prevent and address harassment, intimidation, and/or exploitation, especially in regard to women. The principles of non-discrimination apply to migrant workers.

Prior to implementing any collective dismissing, the Rosavtodor/PIU should carry out an analysis of alternatives to retrenchment. If the analysis does not identify viable alternatives to retrenchment, a retrenchment plan will be developed and implemented to reduce the adverse impacts of retrenchment on workers. The retrenchment plan should be based on the principle of non-discrimination and should reflect the Rosavtodor's consultation with workers, their organizations, and, where appropriate, the government, and comply with collective bargaining agreements if they exist.

The Rosavtodor should ensure that all workers receive notice of dismissal and severance payments mandated by Law and collective agreements in a timely manner. All outstanding back pay and social security benefits and pension contributions and benefits will be paid (i) on or before termination of the working relationship to the workers; (ii) where appropriate, for the benefit of the workers, or (iii) payment will be made in accordance with a timeline agreed through a collective agreement. Where payments are made for the benefit of workers, workers will be provided with evidence of such payments.

The Rosavtodor should provide a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns. The Rosavtodor should inform the workers of the grievance mechanism at the time of recruitment and make it easily accessible to them. The mechanism should involve an appropriate level of management and address concerns, using an understandable and transparent process that provides timely feedback to those concerned, without any retribution. The mechanism should also allow for anonymous complaints to be raised and addressed. The mechanism should not impeded access to other judicial or administrative remedies that might be available under the Law, or substitute for grievance mechanisms provided through collective agreements.

The Rosavtodor should not employ children in any manner that is economically exploitative, or is likely to be hazardous or to interfere with the child's education, or be harmful to the child's health or physical, mental, spiritual, moral, or social development. The Rosavtodor should identify the presence of all persons under the age of eighteen (18). Children under the age of eighteen (18) should not be employed in hazardous work. All work of persons under the age of eighteen (18) should be subject to an appropriate risk assessment and regular monitoring of health, working conditions, and hours of work.

The Rosavtodor should not employ forced labor, which consists of any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty. This covers any kind of involuntary or compulsory labor, such as indentured labor, bonded labor, or similar labor-contracting arrangements.

With respect to contracted workers, the Rosavtodor should use best endeavors to ascertain that the third parties who engage these workers are reputable and legitimate enterprises and operate in a manner consistent with the Law. The Rosavtodor should establish policies and procedures for managing and monitoring the performance of such third party employers in relation to the requirements of this ESMP. In addition, the Rosavtodor should use best endeavors to incorporate these requirements in contractual agreements with such third party employers. The Rosavtodor should ensure that contracted workers will be access to a grievance mechanism. In cases where the third party is not able to provide a grievance mechanism the Rosavtodor should extend its own grievance mechanism to server workers engaged by the third party.

The Rosavtodor should evaluate the risks and impacts to the health and safety of the Affected Communities during the project life-cycle and will establish preventive and control measures consistent with good international industry practice, such as in the World Bank Group Environmental, Health and Safety Guidelines or other internationally recognized sources. The Rosavtodor should identify risks and impacts and propose mitigation measures that are commensurate with their nature and magnitude.

The Rosavtodor should avoid or minimize:

- exposure to hazardous materials and substances that may be released by the subproject;
- the potential for community exposure to water-borne, water-based, water-related, and vector-borne diseases, and communicable diseases that could result from project activities, taking into consideration differentiated exposure to and higher sensitivity of vulnerable groups; and
- transmission of communicable diseases that may be associated with the influx of temporary or permanent project labor.

Where there is a potential for the public (including workers and their families) to be exposed to hazards, particularly those that may be life-threatening, the Rosavtodor should exercise special care to avoid or minimize their exposure by modifying, substituting, or eliminating the condition or material causing the potential hazards. Where hazardous materials are part of existing project infrastructure or components, the Rosavtodor should exercise special care when conducting decommissioning activities in order to avoid exposure to the community. The Rosavtodor should use best endeavors to control the safety of deliveries of hazardous materials, and of transportation and disposal of hazardous wastes.

The Rosavtodor and its Sub-Contractors should be guided by the principles of proportionality and good international practice in relation to hiring, rules of conduct, training, equipping, and monitoring of such workers, and by this ESMP.

The Rosavtodor should assess and document risks arising from the project's use of government security personnel deployed to provide security services. The Rosavtodor should provide and maintain barriers, landscaping and lighting in and around the Site area where necessary for safety of Construction Works and the population. The Rosavtodor must provide adequate lighting (including

sufficient spare capacity in case of accident) in all locations where Construction Works are carried out in the evening, in order to guarantee the safety of such works.

The Rosavtodor and its Sub-Contractors must provide and guarantee the use of appropriate equipment and labor safety arrangements for all workers and staff hired by the Rosavtodor and its Sub-Contractors directly or otherwise. Such equipment must include, but not be limited to, protective helmets, eye glasses and other eye protection equipment, ear protectors, safety belts, safety equipment for working on water, rescue equipment, fire extinguishers and first aid kits. Safety helmets and working footwear must be worn by all the staff on Site.

The Rosavtodor must provide adequate number of WCs and other sanitary facilities in the Site area where works are carried out, and guarantee their regular cleaning and hygienic maintenance.

The Rosavtodor must appoint one employee in charge of labor safety full time.

Drilling and blasting operations shall comply with the Law. The Rosavtodor must obtain all the approvals and make all the necessary payments for the purchase, storage and usage of explosives. The Rosavtodor must keep records of all explosive received and used. All explosive substances and devices must be kept in a safe place in accordance with requirements set by Law. The Rosavtodor must provide an approved public warning system using sound and visual methods to alert individuals of blasting. Prior to blasting, individuals must be removed from explosion area to a place safe from debris.

The Rosavtodor should appoint an accident prevention officer responsible for maintaining safety and protection against accidents on Site area. The accident prevention officer must:

- have education in road traffic safety or experience in maintenance of traffic control devices and protection of traffic within road construction projects;
- check the operability and locations of operating traffic management devices;
- review the Design for requirement for devices to provide safe and efficient traffic;
- remedy all defects and malfunctions in the traffic management system;
- provide coordination with the road police in what regards traffic safety issues;
- check the construction area, equipment storage and locations where building materials are used and stored, and transport arrangements for compliance with traffic safety norms; and
- brief workers and specialists weekly on traffic safety issues.

The person in charge of accident prevention must implement an introductory training course on safety within a week of the Commencement Date. The training course must cover safety and improvement of knowledge about sexually transmitted diseases.

3. SCREENING OF SUBPROJECTS

The screening mechanism was developed to identify probable risks and impacts of subprojects. The screening is conducted at the design stage and serves the following purposes:

- Identify sensitive receptors; and
- Avoid implementing subprojects associated with significant environmental and social risks and impacts falling under Category A projects as per the Bank's classification (see Appendix E).

The Client jointly with the Bank screen every new potential subproject.

The screening is based on the criteria given in the Bank's Environmental and Social Exclusion List (Appendix A) and the Environmental and Social (E&S) Eligibility Criteria (see Appendix B).

The Client will gather all necessary information about the subproject in the amount sufficient for the screening, and assess it against several aspects of E&S risks:

- General Screening (Appendix C);
- Critical Habitat Screening (Appendix D);
- Land Acquisition and Resettlement Screening (The Resettlement Planning Framework, Appendix 2);
- Indigenous Peoples Screening (Indigenous Planning Framework, Appendix 1).

4. METHODOLOGY AND SCOPE OF WORK FOR CONDUCTING SUB-PROJECTS' ENVIRONMENTAL AND SOCIAL ASSESSMENTS

4.1 Introduction

Consideration of environmental and social factors throughout the entire lifecycle of the Project (preparatory works, construction operations, production operations, and decommissioning) is an essential prerequisite to Project implementation in accordance with the sustainable development concept. The environmental and social impact assessment (ESIA) is recognized as the most effective way to ensure such consideration.

On each sub-project that match the screening criteria an ESA will be conducted.

The ESIA is an iterative process which comprises prediction and evaluation of potential impacts of the Project on "physical" and "biological" components (indicators) of the environment and on social and socioeconomic components. ESIA is not linear, but the consistent cyclical process. The ESIA findings are detailed, revised and adjusted as Project's technical aspects are developed and the ESIA is carried out.

The ESIA Report will reflect the studies, findings and management and mitigation measures included in regulatory driven E&S permitting process, permitting conditions issued by the relevant authorities, processes followed by the sub-project PIU (including stakeholder engagement and consultations), and necessity for additional studies and mitigation/management measures driven by the AIIB requirements (e.g. positive eligibility criteria) to ensure the alignment of the sub-project with Applicable Standards.

The ESIA Report will include a sub-project specific ESAP (including guidance for preparing applicable specialized management/action plans such as Biodiversity Management/Action Plan, Resettlement (Action) Plan, Livelihood Restoration Plan, etc. (if relevant)), that will be implemented by the sub-project PIU to align the sub-project with the Applicable Requirements and the ESMPF.

The overall ESIA approach consists of several stages that illustrated in figure below (*Figure 4.1-1*).

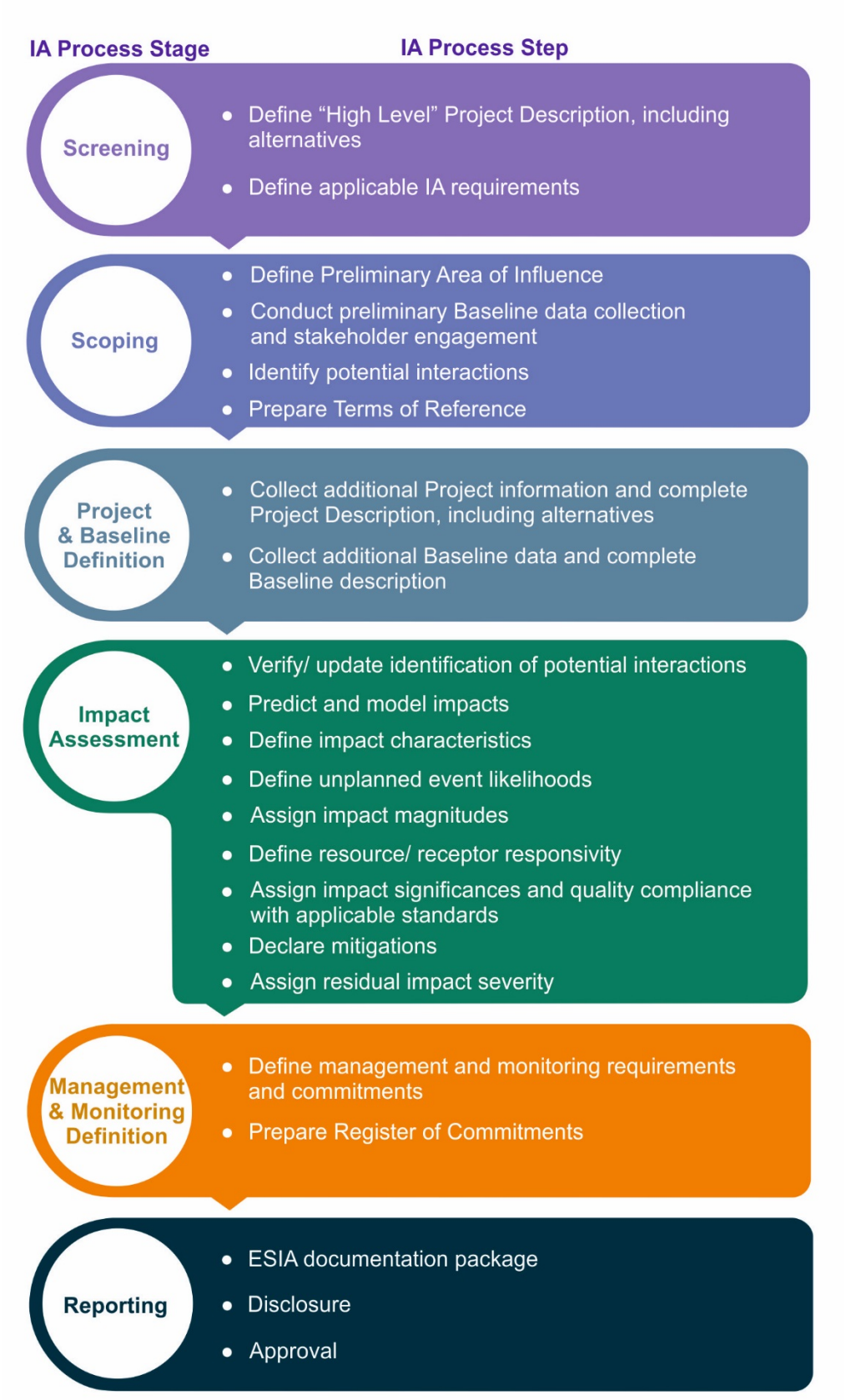

Figure 4.1-1: ESIA Stages

The Impact Assessment stage is discussed in *section 4.2* below. Template of Contents of the Environmental and Social Assessment Report is presented in *section 4.3*.

4.2 Impact Assessment Methodology

Impact Assessment is essential stage of the ESIA process. IA is a sequential and cyclic process where specific tasks are formulated and solved with a search for answers to the fore key questions (*Figure 4.2-1*).

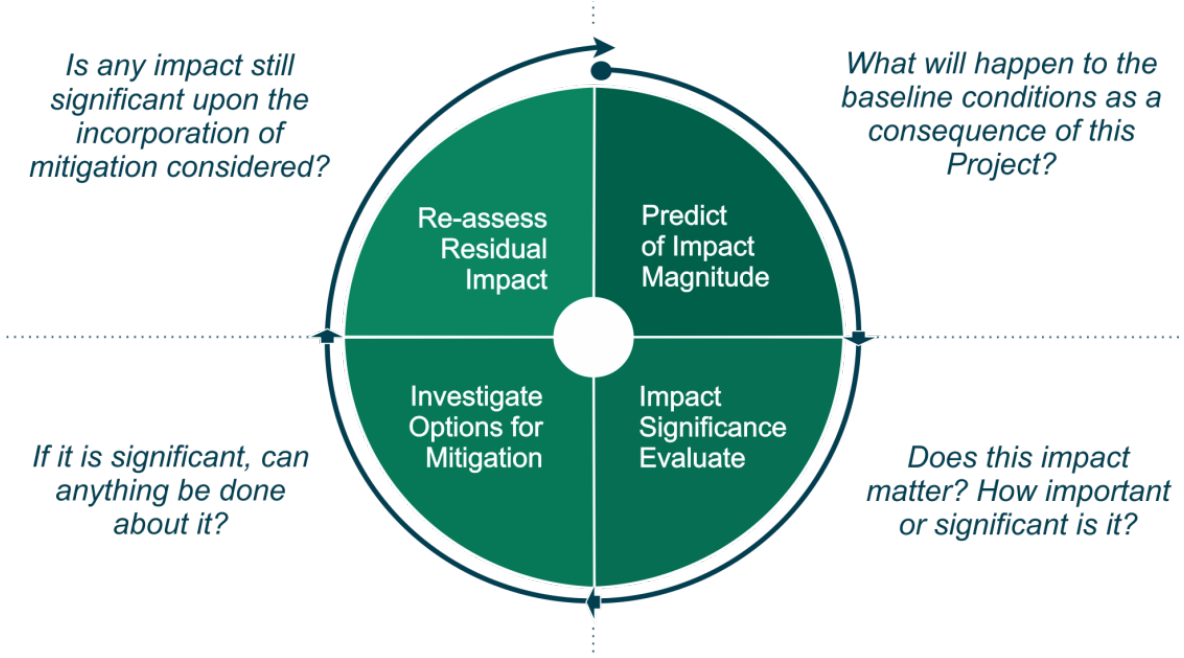

Figure 4.2-1: Impact Assessment Process

4.2.1 Prediction of Impacts

Prediction of impacts is essentially an objective exercise to determine what is likely to happen to the environment and communities as a consequence of the Project and its associated activities during planning, construction and operation phases. Potential impacts are described in *section 2*.

Magnitude of each impact is evaluated with consideration for the following characteristics/parameters of impact: scale, duration, frequency, extent.

Area of influence (AoI) and affected receptor /recipient also are determined at this stage. **Sensitivity / vulnerability / importance (SVI)** of a receptor /recipient which may be of the physical, biological, cultural, and anthropological nature and is based on the following their properties: protected status; policy of the regional government; views of stakeholders; economic value; expert opinion of specialists involved in the ESIA development; International / national standards and regulations; special features of ecosystems, such as resistance to change, rarity, adaptability, diversity, and fragility, ability for recovery; the importance of individual components as environmental components, etc.).

4.2.2 Evaluation of Impact Severity

Once the prediction of impacts is complete, **impact severity** is assessed for each impact. The Severity of a particular impact depends on the interplay of the Magnitude of the impact and the Sensitivity/Vulnerability/ Importance (SVI) of a receptor (*Table 4.2-1*).

Table 4.2-1: Evaluation of Impact Severity

		Sensitivity / Vulnerability / Importance of a Resource or Receptor		
		LOW	MEDIUM	HIGH
Impact Magnitude	NEGLIGIBLE	Negligible	Negligible	Negligible
	SMALL	Negligible	Minor	Moderate
	MEDIUM	Minor	Moderate	Major
	LARGE	Moderate	Major	Major

Impact severity reflects the importance of impacts to society and the environment and provides decision-makers and other stakeholders an understanding of what mitigation activities should be added to the Project.

4.2.3 Impacts' Mitigation Measures

An aim of IA is to get to a position where all positive impacts have been enhanced if practicable and all negative impacts has been reduced to a level that is as low as reasonably practicable.

To achieve this, a hierarchy of mitigation measures (*Figure 4.2-2*) is applied to each identified impact. Prevention at source is the most preferred and compensation/compensation is the least preferred.

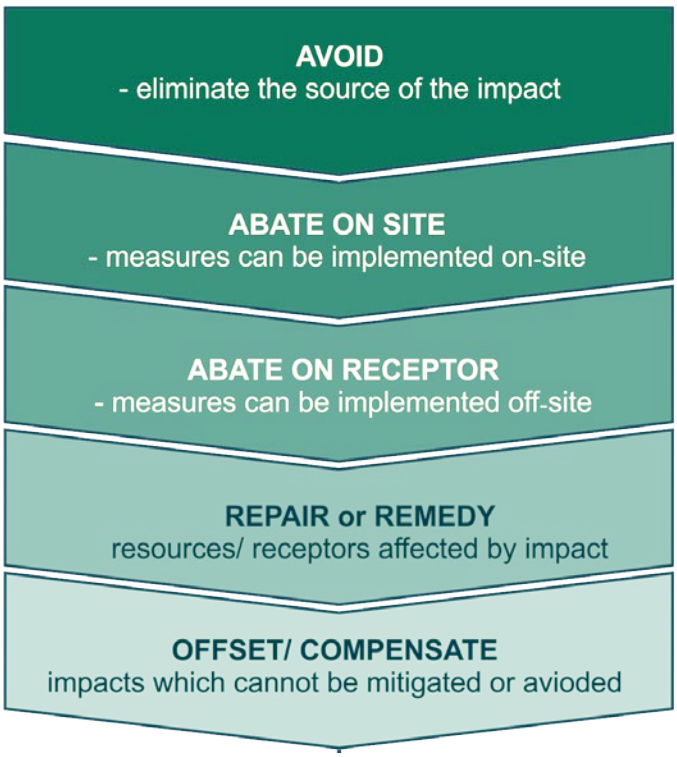

Figure 4.2-2: Mitigation Hierarchy

Mitigation may be already considered as an inherent part of the Project design as "embedded measures" (i.e., prevention of impacts by selecting alternative options of the Project development) while the ESIA process may identify additional mitigation measures required to achieve impact levels deemed acceptable.

Defined measures are agreed upon with Project designers and integrated into Project proposals and the Environmental and Social Action Plan (ESAP) as clear unambiguous commitments.

4.2.4 Determination of Residual Impacts

Once mitigation measures are declared, the next step in the IA process is to assign residual impact severity. This iterative process continues until an impact is deemed acceptable, namely: 1) Project does not have any major residual impacts, certainly not ones that would endure into the long-term or extend over a large area; 2) Good International Industry Practice approaches to enhance positive impacts and reduce negligible, minor and moderate adverse impact severity are applied.

4.3 Template of Contents of the Environmental and Social Assessment Report

Sub-project Appraisal
Environmental and Social Assessment Report
(approximately 20 to 30-page length excluding annexes)

Table of Contents

1. Brief project summary (2-3 pg)
    a. Overview of the Project and description of the sub-project: main elements, past and planned activities
    b. Description of due diligence process (studies reviews, site visits undertaken, interviews, etc.)

2. Project implementing agency (PIA) and sub-project implementation unit (PIU) (2-3 pg)
    a. Descriptions of main implementing agencies (PIA, PIU) involved, organogram(s)
    b. PIA and PIU management of E&S issues, ESMS
    c. Social and environmental capacity assessment of the PIA and PIU

3. Environmental and social impacts of sub-project (5 pg)
    a. E&S categorization and rationale *(refer to AIIB ESP on E&S categorization*)
    b. Environmental impacts: Features of environment and severity of impacts
    c. Social impacts: Local communities, land use, impacts and severity
    d. OHS and Community Health and Safety: risks, impacts and severity

4. Stakeholder engagement (2-3 pg)
    a. Past and present activities, documentation and records available, mass media coverage, public opinion and reputation risks
    b. Stakeholder engagement plan and stakeholder mapping for future activities
    c. Stakeholder feedback obtained in the course of this assignment

5. Administrative Framework (3 pg)
    a. Country regulatory requirements
    b. Regulatory required monitoring and reporting requirements
    c. Overview of AIIB requirements applicable to the sub-project.

6. Compliance with country safeguards system and AIIB requirements (ESP/ESS) compliance matrix (5 pg)
    a. Appraisal Matrix table indicating level of compliance and gaps with Applicable Standards

7. Main environmental and social risks (1-2 pg)
    a. Color coded table with severity of risks

8. Environmental and Social Action Plan (ESAP) (2-3 pg)
    a. Table/matrix combining
        i. Mitigation, Management and Monitoring measures to align with local regulations and AIIB ESP and ESS
        ii. Significant gaps with Applicable Requirements
        iii. Commitments by the Client, PIA and PIU to close these gaps

9. Annexes:
    - ✓ *Interviews held and contact information of people interviewed*
    - ✓ *Documents reviewed*
    - ✓ *Photos of project from mission (natural environment, communities, project works, OHS etc.)*
    - ✓ *References (laws and regulations)*
    - ✓ *List of project design and other document*

5. MINIMISATION OF SIGNIFICANT IMPACTS AND MANAGEMENT OF RISKS

Specific risk management and impact mitigation activities should be selected based on a comprehensive environmental and social impact assessment (ESIA).

The ESIA should mainly focus on projected changes in environmental and social impacts vs the baseline data as a result of construction and operation of the Project. Each impact should be assessed in terms of its severity for the environment and population based on applicable standards and regulations. The focus should be given to identification of significant impacts, i.e. the most important impacts and the impacts that can cause the biggest harm. At the same time, the ESIA should also review a wider range of potential impacts so as to determine which impacts may ultimately be significant.

The impact assessment should refer to corresponding topics and the potential impacts identified[5]. The following procedure should be applied to assess each environmental and social impact:

- Estimation of the impact's potential magnitude;
- Identification of receptors and their susceptibility;
- Assessment of the impact's ultimate severity.

Following the impact estimation and assessment, mitigation measures should be devised to reduce significant impacts. Mitigation measures can either be incorporated in the Sub-Project's design or implemented through the use of methods specifically adapted for the construction and operation phases. Mitigation measures include activities aimed at preventing, reducing or eliminating adverse implications, and where these are not possible – offer compensation by providing financial or other resources as replacement. They also include measures to provide environmental and social benefits.

The framework for reducing risks and significant impacts on road and infrastructure facilities is presented in the tables below:

- *Table 5.1-1* – for the design and pre-construction phases;
- *Table 5.2-1* – for the construction phase;
- *Table 5.3-1* – for the operation phase.

[5] Selection of areas for impact modelling should be based on the worst case scenario concept, which assumes simultaneous operation of main equipment and machinery at project sites

5.1 Design and Pre-Construction Phases

Table 5.1-1: Impact risk management during the design and pre-construction phases of the Project

Risks / Impacts	Management and mitigation measures	Resources, responsible parties	Timing	Achievement criteria
Adverse impact on environmental and social components due to insufficient exploration of optimal location of road and infrastructure facilities	Review the proposed location of the new road facilities, quarries and asphalt and concrete plants; exploration of alternatives. Priority should be given to the options that meet the following criteria: ■ Are sufficiently remote from existing residential areas (taking into account the prevailing wind pattern, terrain and nature of the screening vegetation; ■ Do not / minimally affect private land plots and structures, ■ Do not affect valuable agricultural lands; ■ Do not assume changing the designated land use; ■ Do not affect water bodies and their protection zones; ■ Do not affect protective zones of surface and underground water supply sources; ■ Do not affect critical habitats (including specially protected natural territories) and have the lowest possible impact on natural habitats[6];	Client General Contractor Subcontractors	Before the final location of road and infrastructure facilities is determined	Report on exploration of alternatives and justification of the final option
Restriction or loss of access to territories due to insufficient elaboration of technical solutions	■ In order to minimize possible impacts associated with the deterioration or loss of access to the territories, provide for the construction of a sufficient number of exits, over- and underpasses, animal passes, pedestrian crossings, ensuring the preservation of the connectivity of the territories divided by the road, ■ In order to ensure connectivity, consult with local residents, affected agricultural enterprises and businesses to assess the sufficiency of exits, overpasses, etc..	Client	Prior the finalization of technical solutions	■ Minutes of public consultation with affected communities ■ Technical design providing tailored to the queries and needs of affected communities
Adverse impact on environmental and social components due to insufficient exploration of baseline conditions	Gather and update baseline environmental data in the Project Area with multi-seasonal field investigations and measurements, including for the following environmental components: ■ Air (concentrations of key pollutants); ■ Noise environment (equivalent and maximum sound levels); ■ Geology and relief (unfavorable exogenous processes); ■ Surface and underground water (concentrations of key pollutants); ■ Soils (concentrations of key pollutants); ■ Biodiversity (terrestrial and aquatic ecosystems; identification of rare and vulnerable species; identification of routes of seasonal migration of wild animals; identification of critical and natural habitats). Gather and update baseline socioeconomic data in the Project Area and risk factors: ■ Historical and cultural review (including an archaeological review of the main and associated facilities such as quarries and access roads); ■ Safeguard measures for territories of military operation of World War II (identification of hazardous facilities at areas subject to historical military operations); ■ Socioeconomic conditions; ■ Mobility of population; identification of routes of economic, transport and other travel, and cattle driving routes; ■ Community health, ■ Conduct a screening exercise to identify the receptors most sensitive to potential adverse impacts (schools, kindergartens, hospitals etc.).	General Contractor Subcontractors	After location of all construction sites has been fixed but before or in parallel with the development of a detailed feasibility study	Reports on baseline environmental conditions. If necessary – adjustment of design solutions following the baseline assessment.
Adverse impact on environmental and social components due to the absence of impact assessment	Conduct a full-scale ESIA in line with national and international standards, including: Identification of potential receptors for each type of impact; ■ Modelling of adverse impacts on specific environmental components; ■ Qualitative and quantitative assessment of each type of impact on specific environmental components based on internationally recognized techniques; ■ Development of additional measures to reduce residual impacts (including construction of wildlife crossings and passages, noise screens etc.); ■ Develop a monitoring plan for all anticipated types of adverse impacts for the construction and operation phases for the nearest sensitive offsite receptors. This will ensure proper measures are in place to ensure compliance with national and international standards.	General Contractor Subcontractors	In parallel with development of a detailed FS	■ The international-format ESIA report approved by the Lender. If necessary – adjustment of design solutions following the assessment. ■ Report on the proposed environmental monitoring. If necessary – preliminary equipment of sampling locations to avoid irrelevant results.
Road safety for employees and local residents	■ Conduct a Road Safety Audit of Subprojects to identify and assess road safety risks. Following the audit, additional measures including their timing and frequency will be determined to ensure road safety. ■ Develop a Traffic Management Plan for the vehicles involved in the construction phase for each Subproject. Actions to be included in the plan are given in Appendix F.	Client General Contractor	Development of documents prior to construction works	■ Road safety audit report; ■ Traffic management plan;

[6] As per AIIB's Environmental and Social Framework

Risks / Impacts	Management and mitigation measures	Resources, responsible parties	Timing	Achievement criteria
Land acquisition and involuntary resettlement	■ Consider project alternatives to minimize or avoid land acquisition and involuntary resettlement; ■ Develop and implement Resettlement Action Plan (RAP); ■ Information disclosure and meaningful consultation with affected parties on land acquisition and resettlement in accordance with the RAP; ■ Grievance Redress Mechanism; ■ Develop a monitoring plan for indicators characterizing changes in living conditions and living standards of displaced persons	Client General Contractor	Development and implementation of documents prior to construction works	■ Report on implementation of RAP, ■ Minutes of consultation meetings
Adverse impact on Project's facilities due to the global climate change (in the future)	Design pipe and drainage systems based anticipated changes in precipitation patterns; Design road structures based on the worst case scenario for outdoor temperatures; Procure all necessary approvals related to protection against natural calamities and settlement of damages; Review climate-related issues specifically in the ESIA.	General Contractor Subcontractors	In parallel with development of a detailed FS, Prior to construction	Adjusted design solutions based on regional long-term climate projections. Availability of necessary approvals related to protection against natural calamities and settlement of damages.

5.2 Construction Phase

Table 5.2-1: Management and mitigation measures Project's risks and impacts at construction phase

Risk / Impact	Management and mitigation measures	Monitoring, frequency	Resources, responsible parties	Timing	Achievement criteria
Impact on air	■ For highly susceptible receptors, which may be identified during preliminary screening and which are potentially exposed to a significant impact according to the impact assessment, develop mitigation measures like installation of filtration or forced ventilation systems etc.	Inspections of sites Regular audits (semi-annually) Environmental monitoring	Client General Contractor	Prior to construction. If necessary – adjustment of design solutions (development of additional measures) following the monitoring throughout the construction phase	■ Absence of non-conformities in audit reports; ■ Absence of grievances from local communities; ■ Absence of excessive concentrations of any pollutant at environmental monitoring areas
Impact on air: Emissions of inorganic gaseous pollutants (nitrogen oxides, carbon oxide, sulphur dioxide)	■ Use state-of-the-art construction machinery equipped with engines compliant with at least Euro III standards, with emission control and minimal noise characteristics; ■ Use diesel generators with NO_X emission reduction systems (e.g. dry/wet low NO_X technologies, selective catalytic reduction, whichever is feasible); ■ Develop and implement work schedule so as to i) minimize the number of simultaneously operating machinery and equipment; ii) allocate different time slots for traffic of construction machinery and vehicles to and from construction sites; iii) minimize overall idle operation and fuel consumption; iv) avoid operating machinery and equipment during smog and atmospheric temperature inversions; ■ Regularly carry out preventive engine maintenance of construction machinery and vehicles; ■ Carry out regular engine exhaust tests for construction machinery and motor vehicles (at least annual scheduled tests and also after every engine overhaul or adjustment); ■ Do not use machinery/vehicles, which were not subject to technical inspection and exhaust gases testing; ■ Do not burn solid construction waste (including felling residue); ■ Use low-sulphur fuel; ■ Train Project drivers in safe and fuel-saving driving practices (e.g. measured acceleration and driving within safe speed limits.	Inspections of sites Regular audits (semi-annually) Environmental monitoring	General Contractor Subcontractors	During all works involving construction machinery	■ Absence of non-conformities in audit reports; ■ Absence of excessive concentrations of inorganic pollutants at environmental monitoring areas
Impact on air: Emissions of dust (solid suspended particles)	Measures to mitigate deterioration of ambient air quality due to emissions of dust (particulate matter) during construction stage: ■ Apply watering to on-site and off-site dirt roads; in case watering is unable to provide sufficient dust suppression, apply other techniques, such as chemical suppressants or fabric covers; ■ Restrict earthworks during the periods of strong winds; ■ Minimize the period between excavation and backfilling of soils; ■ Mulch or cover areas of occasional or no construction traffic within the sites; ■ Impose and signpost a maximum speed limit of 15 km/h on site roads.	Inspections of sites Regular audits (semi-annually) Environmental monitoring	General Contractor Subcontractors	During earthworks	■ Absence of non-conformities in audit reports; ■ Absence of excessive concentrations of dust at environmental monitoring areas
Impact on air: Emissions of organic pollutants (saturated hydrocarbons, kerosene, butyl acetate etc.)	■ Replace solvent-based paints with water-based paints where feasible.	Inspections of sites Regular audits (semi-annually)	General Contractor Subcontractors	During painting operations	■ Absence of non-conformities in audit reports
Noise and vibration impact	■ Select low-noise equipment for concreting and other works; ■ Perform noisy works only at daytime; ■ Develop detailed work plans and schedules to avoid simultaneous operation of noisy equipment where feasible; ■ Develop detailed master plans to ensure the maximum possible distance between noisy equipment and residential areas; ■ Installation of noise suppression casing or fencing around noisy equipment or areas; ■ Equip portable cabins at construction camps with sufficient acoustic insulation,	Inspections of sites Regular audits (semi-annually) Environmental monitoring	General Contractor Subcontractors	Throughout the construction phase	■ Absence of non-conformities in audit reports; ■ Absence of excessive sound levels at environmental monitoring areas
Impact on geology and soil: Disturbance of natural bedding of soils and changes in the relief; Development and intensification of adverse exogenous processes /	■ Rehabilitate / reclaim lands in line with national standards; ■ Reinforce road slopes, culvert bottoms and new channels to prevent erosion and transfer of substances to nearby areas; ■ Adhere to layered excavation and stockpiling of topsoil for re-use during reclamation; ■ Develop a quarry closure plan by the completion of the construction phase.	Inspections of sites Regular audits (semi-annually) Environmental monitoring	General Contractor Subcontractors	During earthworks	■ Absence of non-conformities in audit reports; ■ Absence of signs of exogenous processes based on monitoring results;

Risk / Impact	Management and mitigation measures	Monitoring, frequency	Resources, responsible parties	Timing	Achievement criteria
erosion and impact on the soil water regime					■ Availability of quarry closure plans
Impact on geology and soil: Degradation of soils due to pollution	■ Enter into contracts for removal of solid and liquid waste with licensed contractors.	Inspections and regular audits of sites (semi-annually)	General Contractor Subcontractors	Prior to construction, regular updates throughout the construction phase	■ Availability of valid contracts; ■ Absence of non-conformities in audit reports
	■ Use of technically sound machines and mechanisms to avoid leaks of petroleum products; ■ Collect and treat waste water from transport infrastructure facilities; ■ Install septic tanks / portable toilets to collect domestic wastewater; ■ Install impervious coating on equipment maintenance areas and at temporary waste storage areas.	Inspections and regular audits of sites (semi-annually)	General Contractor Subcontractors	Throughout the construction phase	■ Absence of non-conformities in audit reports; ■ Absence of excessive concentrations of pollutants in soils at environmental monitoring areas
Impact on groundwater: Impact on the level and reserves or artesian and underground water	■ Obtain all necessary permits and approvals from supervisory authorities in relation to water intake facilities.	Audit at an early construction phase	General Contractor Subcontractors	Prior to construction	■ Availability of valid permits and approvals
	■ Ensure water abstraction is within available permits; ■ Equip infrastructure facilities (including accommodation camps) with water-saving devices and meters; ■ Reuse water in the production process; ■ Equip sand and gravel quarries with a sufficiently powerful drainage system; ■ Include water-saving behavior in the personnel training program.	Inspections of sites Regular audits (semi-annually) Environmental monitoring	General Contractor Subcontractors	Throughout the construction phase	■ Absence of non-conformities in audit reports ■ Avoidance of reduction of groundwater level based on well monitoring results
Impact on groundwater: Impact on quality of groundwater	■ Install storm water diversion, collection and, if necessary, treatment systems; ■ Equip infrastructure facilities (including accommodation camps) with efficient treatment facilities; ■ Ensure efficiency and leak tightness of water supply and wastewater disposal systems.	Inspections of sites Regular audits (semi-annually)	General Contractor Subcontractors	Throughout the construction phase	■ Absence of non-conformities in audit reports; ■ Absence of excessive concentrations of pollutants in groundwater at environmental monitoring areas
Impact on surface water: Changes in hydrological regime of watercourses	■ Following limitations of water protection zone and shore protection belts of water bodies; ■ Limit works in flood plains to low water periods; ■ Where possible, construct crossings over small streams from banks, without direct contact with the water body; ■ Install fencing and implement other measures to protect sensitive sections of rivers; ■ Where possible, cover construction areas in small valleys and ravines with metal plates for construction machinery to drive on, or install drainage pipes to allow free run-off.	Inspections of sites Regular audits (semi-annually) Environmental monitoring	General Contractor Subcontractors	Throughout the construction phase	■ Absence of non-conformities in audit reports; ■ Avoidance of changes in the water regime of water bodies at environmental monitoring areas
Impact on surface water: Modification of river channels	■ Preserve the water regime, natural parts of channels, bottom sediments and flood plains wherever possible; ■ Maximize the use of natural materials (lawns, trees) combined with steel structures (gabions) as opposed to in situ concrete to protect and stabilize banks; ■ If channels need to be relocated, prefer a meandering design (as opposed to straight new channels) with asymmetric ranges and natural (soil) bottoms.	Inspections of sites Regular audits (semi-annually) Environmental monitoring	General Contractor Subcontractors	During modification of channels and banks	■ Absence of non-conformities in audit reports; ■ Absence of signs of exogenous processes based on monitoring results
Impact on surface water: Degradation of surface water due to increased turbidity and contamination	■ Enhance management of construction sites during heavy precipitation: suspend operations generating large amounts of deposited materials (e.g. asphalting); cover open surfaces or materials in outdoor storage to reduce transfer of deposited materials into surface water; ■ Prohibit driving along channels and on banks except when absolutely necessary; ■ Mud generated from the concrete batch plant operation operations and washing of cement trucks will be tested for hazardous characteristics and will be disposed of in line with national regulations. ■ An Emergency Response Plan (ERP) should be developed for the construction phase.	Inspections of sites Regular audits (semi-annually) Environmental monitoring	General Contractor Subcontractors	During construction works within water protection zones	■ Absence of non-conformities in audit reports; ■ Absence of excessive concentrations of pollutants in surface water at environmental monitoring areas
Impacts on landscape aesthetics: Changes in aesthetic value of landscapes due to removal of topsoil and vegetation	■ Plant protective greenery along the new road (in line with national legislation if necessary).	Inspections of sites Regular audits (semi-annually)	General Contractor Subcontractors	During reclamation	■ Absence of non-conformities in audit reports
	■ Design and install illumination at construction sites taking into account the distance to nearby residential areas; ■ Install noise screens around construction sites.	Inspections of sites Regular audits (semi-annually)	General Contractor Subcontractors	Prior to construction	■ Absence of non-conformities in audit reports
Impact on biodiversity: Loss and fragmentation of terrestrial and aquatic habitats	■ Compensate damage to forest, hunting and fish resources in line with national legislation.	Documentation audits	Client General Contractor	As per national legislation	■ Calculation and implementation of compensation activities

Risk / Impact	Management and mitigation measures	Monitoring, frequency	Resources, responsible parties	Timing	Achievement criteria
					approved by supervisory authorities; ■ Absence of non-conformities in audit reports
	■ Where necessary, develop and implement a biodiversity action (management) plan with additional measures to reduce impacts on biodiversity, including compensation measures.	Inspections of project sites and areas of compensation activities Regular audits (semi-annually)	Client General Contractor	Before completion of construction	■ Developed and implemented biodiversity action (management) plan; ■ Absence of non-conformities in audit reports
Impact on biodiversity: Loss and fragmentation of terrestrial habitats	■ Restoration of temporary withdrawn lands including access roads by means of technical and biological reclamation in line with national legislation; ■ Prohibit traffic of construction machinery and vehicles outside access roads; ■ Design transitional zones from the roadway edge to the RoW border: vegetation cover to be formed by low-rise plants near the road and larger trees further from the road to create a habitat for a diversity of plants and animals; create ground harnesses at future animal crossings and landscape transition areas.	Inspections of sites Regular audits (semi-annually)	General Contractor Subcontractors	Throughout the construction phase	■ Developed and implemented disturbed lands reclamation plan; ■ Absence of non-conformities in audit reports
Impact on biodiversity: Loss of flora and fauna due to clearance of vegetation, burning of waste, operation of machinery etc. Disturbance of animals	■ Provide training to drivers and construction personnel to care about wildlife; ■ Fence construction sites to prevent animals from entering the sites and getting killed in accidents; ■ Limit clearance of vegetation to late autumn – winter; ■ Where possible, clear vegetation gradually, to give animal enough time to leave the area; ■ Prohibit unauthorized gathering of wild plants and berries, hunting and fishing near construction sites and camps; ■ Limit noise pollution to the highest possible degree; introduce speed limits for vehicular traffic; perform timely maintenance of machinery; monitor noise pollution at night etc.; ■ Stockpile felling residue at designated areas for further offsite removal; prohibit burning of felling residue; ■ Appoint a biodiversity expert to support construction activities within most vulnerable habitats (if impact cannot be fully avoided).	Inspections and regular audits of sites (semi-annually) Environmental monitoring	General Contractor Subcontractors	Throughout the construction phase	■ Absence of non-conformities in audit reports ■ Absence of signs of fauna losses at environmental monitoring areas
Impact on biodiversity: Degradation of terrestrial and aquatic habitats due to a negative change in the quality of air, soils, surface and underground water	■ Similar to impacts on air, soils, surface and underground water.	Inspections and regular audits of sites (semi-annually) Environmental monitoring	General Contractor Subcontractors	Throughout the construction phase	■ Absence of non-conformities in audit reports; ■ Absence of signs of depressed ecosystems at environmental monitoring areas within the Project Area
Impact on biodiversity: Loss of aquatic organisms and habitats due to construction of culverts, bridges and overpasses across watercourses	■ Prohibit construction activities at water bodies during fish spawning and migration; ■ Use most environmentally sound techniques if a decision is made to straighten channels and modify configuration of the riverbank zone (see Impact on surface water).	Inspections and regular audits of sites (semi-annually) Environmental monitoring	General Contractor Subcontractors	At the stage of construction works within the boundaries of water bodies	■ Absence of non-conformities in audit reports; ■ Absence of signs of aquatic habitat loss and degradation at environmental monitoring areas
Impact on biodiversity: Invasion of alien species	■ Develop a plan to monitor populations of invasive species within the Project's area of influence to prevent their propagation across the area of influence.	Documentation audits	General Contractor Subcontractors	Prior to construction	■ Developed plan to monitor populations of invasive species as part of environmental monitoring
	■ Introduce mandatory washing of wheels for cars entering and leaving sites; ■ Minimize removal of local plant species; plant local species on disturbed lands. Avoid planting of invasive species at construction camps and elsewhere within the Project's area of influence, including during landscaping and greening of disturbed areas; ■ Restore vegetation (planting of native grasses, shrubs and trees immediately after site clearing and completion of construction); ■ Reduce the risk of propagation of invasive species by timely restoring natural or semi-natural vegetation at bare areas (planting of native grasses, shrubs and trees).	Inspections of sites Regular audits (semi-annually) Environmental monitoring	General Contractor Subcontractors	Throughout the construction phase	■ Absence of non-conformities in audit reports; ■ Absence of signs that populations of invasive species develop at environmental monitoring areas
Impact on cultural heritage: Damage to archaeological sites	■ If physical cultural heritage is accidentally discovered, construction contractors will follow the chance find procedure given in Appendix G. The chance find procedure will apply to all	Site inspections. Regular audits (semi-annually)	Client General Contractor Subcontractors	Throughout the construction phase	■ Absence of grievances from local communities; ■ Training log;

Risk / Impact	Management and mitigation measures	Monitoring, frequency	Resources, responsible parties	Timing	Achievement criteria
	contractors and subcontractors involved during the construction phase. Prior to earthworks, construction personnel will be given a relevant briefing.				■ Post-training knowledge assessment results; ■ Chance find reporting
Impact on cultural heritage: Damage to physical cultural heritage (except for archaeological sites)	■ Respect boundaries of protective zones around physical cultural heritage. ■ Discuss and agree on additional mitigation measures (If necessary) during consultations with local communities and a wider public (see the Stakeholder Engagement Plan). ■ Prior to earthworks, construction personnel will be given a relevant briefing.	Site inspections. Regular audits (semi-annually)	Client General Contractor Subcontractors	Throughout the construction phase	■ Absence of grievances from local communities; ■ Training log; ■ Post-training knowledge assessment results
Impact on commercial organizations: Inconveniences caused by construction activities	■ Implement measures to mitigate noise and air pollution. ■ Ensure timely access to commercial organizations during the construction phase (creation of additional exits or bypass roads etc.). ■ Fencing of construction sites and movement of construction machinery to temporary and permanent land allotment and public roads; prevent storage of construction materials or traffic of machinery on privately owned land plots. ■ Conduct consultations with the affected commercial organizations on sufficiency of the designed mitigation measures and the necessity of additional measures; inform the organizations about the availability of the Grievance Mechanism.	Site inspections. Regular audits (semi-annually)	Client General Contractor Subcontractors	Prior to construction works	■ Absence of non-conformities in audit reports; ■ Minutes of consultation meetings with the affected commercial organisations; ■ List of additional measures is approved by the affected persons; ■ Absence of grievances from the affected commercial organisations and local communities
Impacts on utilities infrastructure	■ Obtain technical conditions for the transfer of communications, ■ Develop the schedule of communications transferring and agree it with owners of communications, ■ Conduct consultation with owners of communications to assess the sufficiency of planned activities and the need to develop additional ones.	-	Client General Contractor	Prior to construction works	■ Technical conditions for the transfer of communications, ■ Agreed schedule of communications transferring, ■ Minutes of consultation meetings
Impact on road infrastructure and traffic: Inconveniences caused by construction activities	Introduce traffic management during the construction phase: ■ Creation of temporary bypass roads; ■ Installation of additional road signs; ■ Timing of construction works based on daily and seasonal traffic intensity; ■ Inform road users of the schedule of construction works through website publications and installation of information boards.	Site inspections	Client General Contractor Subcontractors	Prior to construction works	■ Construction-phase traffic management layout for the road section under reconstruction; ■ Absence of grievances from road users and local communities
Impact on road infrastructure and traffic: Degradation of the roadway due to transportation of cargoes and personnel for the Project	■ Inspect the surface quality of the roads to be used for transportation of cargoes and personnel for the Subproject prior to commencement of transportation. ■ Repair damaged sections of the roads if necessary.	Road quality audit prior to commencement of transportation of cargoes and personnel for the Subproject. Monitoring of the road service quality at least once every six months (or more often if requested by local communities)	Client General Contractor Subcontractors	Audit – prior to construction works; Road quality monitoring – throughout the construction phase	■ Absence of grievances from road users and local communities; ■ Road quality audit report
Community health and safety: Increased noise and air pollution	■ Implement measures to minimize impacts associated with increased noise and air pollution levels. ■ Develop a construction schedule in conjunction with the affected social infrastructure (schools and kindergartens) to minimize the impact of atmospheric emissions on children during their studies, ■ Provide affected communities, especially social infrastructure, with information on the construction schedule.	Site inspections. Regular audits (semi-annually) Environmental monitoring	Client General Contractor Subcontractors	Development of documents – prior to construction works; implementation of activities – throughout the construction phase	Construction schedule is approved by sensitive receptors and disseminated to all affected communities
Community health and safety: Risks associated with the operation of quarries	■ Implement measures to minimize impacts associated with increased noise and air pollution levels in the settlements located near the quarries, ■ Ensuring safety measures throughout the operation of quarries: o Fencing of quarry site, o Establishment of information banner, etc.	Site inspections. Regular audits (semi-annually) Environmental monitoring	Client General Contractor Subcontractors	Throughout the construction phase	■ Absence of grievances from local communities, ■ Reclamation of a worked-out quarry / Conclusion of the purchase contract

Risk / Impact	Management and mitigation measures	Monitoring, frequency	Resources, responsible parties	Timing	Achievement criteria
	■ Reclamation of the quarry at the end of its operation. If by the end of construction, the quarry is not developed and its resale to the third parties is planned, include in the purchase contract provision on requirements of reclamation. ■ Consultation with local residents on the implementation of additional measures, such as the upgrading of the quarry area and the establishment of a recreation area.				incorporating relevant provisions
Influx of rotational personnel: Anti-social behaviour and conflicts	To minimize potential risks related to anti-social behavior, sexual exploitation and abuse, harassment, etc. specific Subproject-oriented Code of Conduct will be developed and will include, but not limited to: ■ Provisions on prohibition of any form of gender-based violence, ■ Provisions on prohibition of any form of sexual exploitation and abuse, ■ Provisions on respect for human rights and ethnical norms of behavior for workers during their employment at the Project (both work time and private life since inappropriate behavior outside work place may result in impact on local residents and reputational risks. To minimize the occurrence of conflicts and cases of antisocial behavior at camps the "Accommodation rules and code of conduct" will be developed and implemented, including: ■ Training program on application of Rules for Subproject employees and Subcontractors ■ Review of the issues of interaction with local residents, including informing employees about the need for respect to residents of nearby settlements; ■ Ban on alcohol and drugs; penalties for violations of this requirement, up to termination of working contract; ■ Inform local communities on measures adopted by the Project to ensure community security and availability of the grievance mechanism.	Inspection of living conditions in construction camps	Client General Contractor Subcontractors	Development of documents – prior to construction works; implementation of activities – throughout the construction phase	■ Code of Conduct is developed and communicated to all Subproject employees (including subcontractors), ■ Accommodation rules and code of conduct is developed and communicated to all Subproject employees (including subcontractors) accommodated in construction camps, ■ Absence of grievances from local communities and Subproject employees
Influx of rotational personnel: Spreading of infectious diseases	To minimize the potential risk of STI, following measures have been identified: ■ To provide the construction shift camps with functioning of medical service; ■ Assess the health status of employees before hiring to prevent, when possible, the deterioration workers' health, and reduce the risk of disease for the employee, his colleagues, as well as the local population; ■ Vaccination of employees prior to placing in construction camp in line with national requirements; ■ As part of the safety induction training and regular safety trainings, inform about the dangers of the spreading of STDs and methods of its prevention. Provide the possibility of the free receipt of condoms; ■ Inform local population on functioning of the Grievance Redress Mechanism.	Inspection of medical service in construction camps (quarterly)	Client General Contractor Subcontractors	Implementation of activities – throughout the construction phase	Absence of grievances from Subproject employees and local communities
Security personnel: Conflict with locals	To minimize risks for community health and safety following measures implementation of the following measures is required: ■ Develop clear security personnel prescription of actions of in case of conflict situations; ■ Conduct regular trainings of security personnel on communication with local residents and training of guiding principles on human rights; ■ Implement control measures over the actions of security personnel; ■ Envisage rewards and sanctions, up to termination of working contracts. Security personnel shall be trained before they are allowed to assume their roles at the Subproject on the following: ■ UN Guiding Principles on Business and Human Rights (2011), ■ International Code of Conduct for Private Security Service providers (2010), ■ Voluntary Principles on Security and Human Rights (2000).	Monitoring of security personnel knowledge based on the results of trainings (quarterly)	Client General Contractor Subcontractors	Development of documents and training prior the start of the security work; Monitoring knowledge throughout the construction phase	■ Security personnel prescription of actions is developed, ■ Training log, ■ Post-training knowledge assessment results ■ Absence of grievances from local communities
Impacts on indigenous communities Restriction or loss of access to traditional places of nature use (objects of socio-cultural practices)	Following measures needs to be implemented in order to minimize impacts on indigenous people: ■ Implementation of measures provided by the Indigenous Peoples Planning Framework, ■ Implementation of measures provided by the Stakeholder Engagement Plan, ■ Conduct consultation on planned mitigation measures and development of additional ones (see Stakeholder Engagement Plan), ■ Develop monitoring indicators for impacts on indigenous people, ■ Implement Grievance Redress Mechanism;	Control over the implementation of IPPF and SEP Regular monitoring of baseline indicators for impacts on IPs (semiannually)	Client General Contractor Subcontractors	Throughout the construction phase	■ Absence of grievances from IPs; ■ Consultation log

5.3 Operation Phase

Table 5.3-1: Management and mitigation measures Project's risks and impacts at operation phase

Risk / Impact	Management and mitigation measures	Monitoring, frequency	Resources, responsible parties	Timing	Achievement criteria
Impact on air: Emissions of inorganic gaseous pollutants (nitrogen oxides, carbon oxide, sulphur dioxide)	■ Monitoring of surface concentrations of pollutants at the RoW border as per the operation phase monitoring program; ■ If excessive concentrations are discovered, ensure reduction of average traffic speed at certain parts of the road[7]; ■ Maintain bituminous concrete coating of the road in good condition to avoid reducing traffic speed; ■ Monitor the condition of slopes and slope and roadside vegetation to minimize dusting; ■ Clean the road in a timely manner; perform de-dusting if necessary; ■ Limit the use the de-icing agents to autumn and winter; sweep the road in spring and summer to minimize accidents and emergency braking by motorists; ■ For highly susceptible receptors, which may be identified during preliminary screening and which are potentially exposed to a significant impact according to the impact assessment, develop mitigation measures like installation of filtration or forced ventilation systems etc.	Regular audits (as to be agreed) Environmental monitoring (annually, during repair works and if community grievances are received)	Operator Subcontractors	Throughout the operation phase	■ Absence of grievances from local communities; ■ Absence of excessive concentrations of any pollutant at environmental monitoring areas
Noise and vibration impact	■ Protect residential areas by using noise screens; ■ If excessive noise levels are discovered, ensure reduction of average traffic speed at certain parts of the road; ■ For highly susceptible receptors, which may be identified during screening, develop mitigation measures like installing noise-protected windows etc.; ■ Maintain road flatness in an efficient and timely manner as vibration will be directly related to size of defects on road surface; ■ Monitor noise and vibration at affected receptors (annually and if a grievance is received).	Regular audits (as to be agreed) Environmental monitoring (annually, during repair works and if community grievances are received)	Operator Subcontractors	Throughout the operation phase	■ Absence of non-conformities in audit reports; ■ Absence of excessive sound levels at environmental monitoring areas
Impact on geology and soil: Development and intensification of adverse exogenous processes	■ Regular assessment of drainage infrastructure, lawns and protective greener; perform repair and corrective activities whenever necessary.	Regular audits (as to be agreed) Environmental monitoring (annually, during repair works and if community grievances are received)	Operator Subcontractors	Throughout the operation phase	■ Absence of non-conformities in audit reports; ■ Absence of signs of exogenous processes based on monitoring results
Impact on geology and soil: Degradation of soils due to pollution	■ Maintain areas and passageways in good condition; ■ Use only properly functioning machinery to spread de-icing and de-dusting agents; avoid spreading agents to outside the roadway; ■ Use less toxic de-icing agents like calcium chloride, inhibited phosphate or calcium-magnesium-acetate; ■ If high concentration of chlorides is discovered on adjoining agricultural lands, take measures to reduce the impact on vegetation (loosening, watering, application of organic substances etc.); ■ Develop hazardous spill plans to prevent serious consequences of filtration of contaminated fluids.	Regular audits (as to be agreed) Environmental monitoring (annually, during repair works and if community grievances are received)	Operator Subcontractors	Throughout the operation phase	■ Absence of non-conformities in audit reports; ■ Absence of excessive concentrations of pollutants in soils at environmental monitoring areas
Impact on water: Deterioration of quality of surface and underground water (excessive turbidity, suspended solids, pH, BOD5, petroleum products, benz(a)pyrene, heavy metals, chlorides, ammonium ions)	■ Monitor condition of drainage facilities; ■ Where possible, limit the use of de-icing chemicals taking into account weather conditions and seasonality; give preference to mechanical means like scrubbers and snow ploughs; ■ Monitor the use of de-icing chemicals; monitor quality of surface water for concentrations of chlorides and ammonium ions; train personnel to use de-icing chemicals in an efficient and timely manner; regularly check de-icing equipment ■ If sumps are used, consider upgrading them with more efficient modules like mechanical devices (sand trap, oil trap) and activated carbon module; ■ Remove sludge from roadside treatment facilities in a timely manner; ■ Develop emergency response plans (spills, fires etc.) to prevent serious consequences of filtration of contaminated fluids and fire water.	Regular audits (as to be agreed) Environmental monitoring (annually, during repair works and if community grievances are received)	Operator Subcontractors	Throughout the operation phase	■ Absence of non-conformities in audit reports; ■ Absence of excessive concentrations of pollutants in surface and underground water at environmental monitoring areas
Impact on biodiversity:	■ Use less toxic de-icing agents like calcium chloride, inhibited phosphate or calcium-magnesium-acetate or non-chemical materials like granite chips, sand mix, crushed stone)	Regular audits (as to be agreed)	Operator Subcontractors	Throughout the operation phase	■ Absence of non-conformities in audit reports;

[7] Sections of the road to be subject to speed limitation must comply with road safety regulations; a risk assessment should be conducted for such sections.

Risk / Impact	Management and mitigation measures	Monitoring, frequency	Resources, responsible parties	Timing	Achievement criteria
Suppression of flora and fauna due to pollution of air, soils and groundwater	which would avoid irreversible impacts on photosynthesis and subsequent destruction of plant tissues or death of animals; ■ Ensure the Project meets the good industry practices if pesticides and herbicides are used.	Environmental monitoring (annually, during repair works and if community grievances are received))			■ Absence of signs of depressed ecosystems at environmental monitoring areas within the Project Area
Impact on biodiversity: Loss of animals in road accidents; Disturbance of animal migration routes; Introduction of alien species	■ Install special road signs at areas where wild animals may cross the road; ■ If necessary, install additional fencing (e.g. mesh screens on slopes and in depression) to minimize animal-involving accidents; ■ Monitor efficiency of animal crossings and passages; if necessary, design and construct additional facilities; ■ Monitor introduction of alien species; destroy groups and thickets of invasive species in a timely manner.	Regular audits (as to be agreed) Environmental monitoring (annually, during repair works and if community grievances are received)	Operator Subcontractors	Throughout the operation phase	■ Absence of non-conformities in audit reports; ■ Absence of signs of fauna losses at environmental monitoring areas
Impact of global climate change on the Project	■ Introduce natural disaster policies and procedures at operating level; ■ Include climate data in the monitoring program; ■ Expand the monitoring program to include gathering and review of information about the road surface condition in relation to climate changes; ■ Engage local emergency services to ensure timely notification of hazardous natural phenomena.	Environmental monitoring (annually)	Operator Subcontractors	Throughout the operation phase	■ The monitoring programme includes measures factoring in anticipated climate changes; operating activities were developed based on the natural disaster response policy and procedures
Impacts on commercial enterprises	■ Implement measures to minimize impacts associated with increased noise and air pollution levels.	Environmental monitoring (annually, during repair works and if community grievances are received)	Operator Subcontractors	Throughout the operation phase	■ Absence of excessive concentrations of any pollutant at environmental monitoring areas ■ Absence of excessive sound levels at environmental monitoring areas ■ Absence of complaints from affected commercial enterprises
Road safety: Risks for road safety due to repair works	Organization of traffic during the period of repair work, including: ■ Provision of temporary detours, ■ Installation of additional road signs, ■ Develop the work schedule taking into account changes in daily and seasonal traffic intensity on the reconstructed road, ■ Inform road users about the schedule of construction works through publications on the website and installation of information stands;	Site inspections	Operator Subcontractors	Prior to start of repair works	■ Scheme of organization of traffic on the section for the period of repair works, ■ Absence of complaints from the local population and road users
Impacts on indigenous communities Restriction or loss of access to traditional places of nature use (objects of socio-cultural practices)	Following measures needs to be implemented in order to minimize impacts on indigenous people: ■ Implementation of measures provided by the Indigenous Peoples Planning Framework, ■ Implementation of measures provided by the Stakeholder Engagement Plan, ■ Conduct consultation on planned mitigation measures and development of additional ones (see Stakeholder Engagement Plan), ■ Conduct monitoring of indicators of impacts on indigenous people, ■ Implement Grievance Redress Mechanism;	Control over the implementation of IPPF and SEP Regular monitoring of baseline indicators for impacts on IPs (semiannually)	Client General Contractor Subcontractors	Throughout the construction phase	■ Absence of grievances from IPs; ■ Consultation log

6. MONITORING AND REPORTING

The implementation of the subprojects that have been selected should be performed at all levels in accordance with the requirements of the ESMPF and relevant ESMP developed for specific subprojects in accordance with the results of the environmental and social assessment. Parties involved in the implementation of the subproject are required to regularly monitor the environmental and social aspects of the subprojects. The scope of monitoring activities, including their extent and frequency, should be proportional to the identified risks and impacts and defined in the relevant ESMPs.

Framework monitoring procedure is provided in section 6.1 of this ESMPF.

General reporting requirements are provided in section 6.2 of this ESMPF.

6.1 Framework monitoring procedure

6.1.1 Introduction

The framework monitoring procedure determines the roles and responsibilities, methodology and frequency, as well as reporting requirements for monitoring aspects comprised in the ESMPF and subprojects' ESMP. This framework procedure has been developed to provide to the project parties a generalized approach to monitoring the environmental and social aspects of subprojects, and therefore cannot be exhaustive or fully compatible for any particular subproject. For each individual subproject, its own monitoring program should be developed, which will reflect the risks and impacts of the subproject and will be proportionate to it.

Each of the parties will ensure the availability of the necessary resources (human, material, etc.) for the successful implementation of the monitoring procedure. If necessary, third-party organizations and experts with relevant experience and knowledge will be involved in monitoring.

6.1.2 Monitoring tools

6.1.2.1 Construction phase

All monitoring activities at the construction phase should be carried out in accordance with the Monitoring Program, which is developed by the General Contractor (EPC Contractor) before the start of construction work in accordance with the ESMPF. Prior to the start of the works, the Monitoring Program should be approved by Rosavtodor and the Bank, and all the subproject parties should establish an organizational structure and allocate resources for monitoring.

Types of monitoring during the construction phase include (Table 6.1-1):

- Inspections;
- Internal audit;
- External audit;
- Environmental monitoring;
- Social monitoring.

6.1.2.2 Operational phase

At the operational phase, monitoring is carried out by the operating organization according to the Monitoring Program, which is developed by the operating organization before the start of the subproject's operation. The Monitoring Program should be approved by Rosavtodor and the Bank, and all the subproject parties should establish an organizational structure and allocate resources for monitoring.

Types of monitoring during the operational phase include (Table 6.1-2):

- Inspections;
- Internal audit;
- External audit;
- Environmental monitoring;
- Social monitoring.

Table 6.1-1: Types of monitoring during the construction phase

Monitoring type	Methodology	Location	Frequency	Performed by	Audited party	Reporting
Inspections	Visual inspection	Construction sites, equipment and material storage areas, construction camps and other objects within the subprojects' area of influence defined in the impact assessment	Daily, weekly	General Contractor Subcontractors	Subcontractors	Compliance log Weekly report Monthly report
Internal audit	Visual inspection Documentation check		At least once every six months	General Contractor PIU	General Contractor Subcontractors	Internal audit report
External audit	Visual inspection Documentation check		At least once a year	Rosavtodor and the Bank, if necessary with the involvement of external consultants	General Contractor Subcontractors PIU	External audit report
Environmental monitoring	Visual inspection, sampling and analysis, etc.	Environmental components in the subprojects' area of influence	Quarterly or according to the environmental monitoring program	General contractor, if necessary with the involvement of external consultants	-	Environmental monitoring report
Social monitoring	Surveys, interviews, analysis of documents, etc.	Settlements in the subprojects' area of influence, construction camps, etc.	According to the social monitoring program	General contractor, if necessary with the involvement of external consultants	-	Social monitoring report

Table 6.1-2: Types of monitoring during the operational phase

Monitoring type	Methodology	Location	Frequency	Performed by	Audited party	Reporting
Inspections	Visual inspection	The objects of the operating organization, subproject route, and other objects in the subprojects' area of influence	Daily, weekly	Operating organization	Operating organization	Compliance log
Internal audit	Visual inspection Documentation check		At least once a year	Operating organization	Operating organization	Internal audit report
External audit	Visual inspection Documentation check		If discrepancies are found	Bank, if necessary with the involvement of external consultants	Operating organization	External audit report
Environmental monitoring	Visual inspection, sampling and analysis, etc.	Environmental components in the subprojects' area of influence	Quarterly or according to the environmental monitoring program	Operating organization, if necessary with the involvement of external consultants	-	Environmental monitoring report
Social monitoring	Surveys, interviews, analysis of documents, etc.	Settlements and other objects in the subprojects' area of influence	According to the social monitoring program	Operating organization, if necessary with the involvement of external consultants	-	Social monitoring report

6.1.3 Checklists

For conducting inspections and audits, the General Contractor develops plans and checklists corresponding to the nature and significance of the identified risks and impacts. Auditors will check the checklists during visual inspections and documentation analysis.

When conducting inspections and audits, auditors should not focus solely on the conformity of activities with checklists, but keep in mind other possible inconsistencies.

The checklist format for inspections and audits is presented in the appendixes to this ESMPF. (Appendix H and Appendix I).

6.1.4 Monitoring program

Monitoring programs for the construction and operation phases should be consistent with the nature and significance of the risks and impacts. The purpose of the monitoring program is to ensure continuous compliance with environmental and social requirements and standards at all sites and facilities of a subproject.

The implementation of the monitoring program should provide information on the effectiveness of mitigation measures provided for in the ESMPF and ESMP for the subproject.

The monitoring procedure involves:

- determination of monitoring parameters (indicators);
- determination of the type, frequency and location of monitoring points and sites for analysis of the current environmental and social situation and prediction of its changes
- determination of methods and tools for monitoring;
- preparation, maintenance and execution of reporting documentation based on monitoring results

To implement the monitoring program, the General Contractor shall engage qualified specialized contractors, including:

- laboratories and analytical centers with relevant accreditation certificates;
- experts with knowledge and experience in the region.

Contracts with monitoring contractors shall be signed before the start of construction work / operation and taking into account the need for preliminary background studies.

Typical monitoring programs are presented in the appendixes to this ESMPF (Appendix J and Appendix K).

6.1.5 Registration of nonconformities and corrective measures

All discrepancies (nonconformities) identified during inspections, audits and monitoring are reflected in the audit report and / or are recorded in the Compliance log. Nonconformities that can be resolved on site without additional risks are addressed once identified; a record is made in the report and / or Compliance log. If necessary, additional corrective measures are submitted to the report and / or Compliance log.

Corrective measures are approved by the parties; they are determined by the deadline and responsible.

6.2 General reporting requirements

The results of inspections, audits and monitoring should be subject to reporting to higher members of the Project (Table 6.2-1, Table 6.2-2).

Subcontractors are required to ensure compliance of their activities under the subproject with the ESMPF and ESMP developed for the subproject, as well as regularly provide reports to the General Contractor confirming this compliance.

The General Contractor shall monitor the compliance of the Subcontractors' activities with the provisions of the ESMPF and ESMP, and provide reports to the PIU.

Each PIU is responsible for the compliance of its subprojects with the requirements of ESMP and the ESMPF, by the means of regularly monitoring and audit of the activities of General Contractors. Reporting prepared according to the results of monitoring and audit is submitted to the central office of Rosavtodor.

Rosavtodor aggregates reporting on subprojects received from the PIUs and sends it to the Ministry of Transport of the Russian Federation and to the Bank.

Prior to commencement of work, the parties determine the appropriate reporting forms and key performance indicators (KPIs) and forward this information to the General Contractor and Subcontractors.

Reporting forms and key performance indicators will be reviewed at least once a year during the evaluation of E&S activities.

6.2.1 Weekly report

Subcontractors prepare weekly E&S performance reports in accordance with pre-approved forms. Weekly reports are provided to the General Contractor at weekly coordination meetings.

Weekly reports are not prepared during the operational phase.

6.2.2 Monthly report

On a monthly basis, the General Contractor compiles the weekly reports of the Subcontractors and prepares a monthly &S performance reports, which is submitted for consideration and approval by the PIU.

Monthly reports are not prepared during the operational phase.

6.2.3 Environmental monitoring report

On a quarterly basis, the General Contractor prepares reports on environmental monitoring. Data on indicators monitored less frequent than once a quarter are included in the next quarterly report issued after measurements.

6.2.4 Internal audit report

At least once every six months, the PIU conducts an internal audit of the activities of the General Contractor and prepares an Internal Audit Report, which is sent for consideration to the central office of Rosavtodor and the Bank. An internal audit and reporting may be carried out by a specialized external consultant.

An internal audit during the operation phase is carried out by the operating organization at least once a year.

6.2.5 External audit report

At least once a year, Rosavtodor and the Bank (if necessary, with the participation of a specialized external consultant) conduct an external audit of the subproject. Based on the audit results, an External Audit Report is prepared.

During the operation phase, an external audit is carried out in case of serious discrepancies.

6.2.6 Completion report

At the end of construction, as well as at the end of the project cycle and exit from the subproject, the Bank prepares a completion report using data provided by the General Contractor, PIU and Rosavtodor.

Table 6.2-1: Frequency of reporting at the construction phase

Party	Timing					
	Weekly	Monthly	Quarterly	Every six months	Annually	End of construction
Bank	-	-	-	-	-	Completion report
Rosavtodor	-	-	-	-	External audit report	-
PIU	-	-	-	Internal audit report	-	-
General Contractor	-	Monthly report	Environmental monitoring report	-	-	-
Subcontractors	Weekly report	-	-	-	-	-

Table 6.2-2: Frequency of reporting at the operational phase

Party	Timing					
	Weekly	Monthly	Quarterly	Every six months	Annually	End of subproject
Bank	-	-	-	-	External audit report (if necessary)	Completion report
Rosavtodor	-	-	-	-	External audit report (if necessary)	-
Operating organization	-	-	Environmental monitoring report	-	Internal audit report	-

APPENDIXES

APPENDIX A AIIB ENVIRONMENTAL AND SOCIAL EXCLUSION LIST

- Forced labor or harmful or exploitative forms of child labor.
- The production of, or trade in, any product or activity deemed illegal under national laws or regulations of the country in which the Project is located, or international conventions and agreements, or subject to international phase out or bans, such as.
  - Production of, or trade in, products containing polychlorinated biphenyl (PCBs)
  - Production of, or trade in, pharmaceuticals, pesticides/herbicides and other hazardous substances subject to international phase outs or bans (Rotterdam Convention, Stockholm Convention)
  - Production of, or trade in, ozone depleting substances subject to international phase out (Montreal Protocol).
- Trade in wildlife or production of, or trade in, wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES);
- Trans-boundary movements of waste prohibited under international law (Basel Convention)
- Production of, or trade in, weapons and munitions, including paramilitary materials
- Production of, or trade in, alcoholic beverages, excluding beer and wine
- Production of, or trade in, tobacco
- Gambling, casinos and equivalent enterprises
- Production of, trade in, or use of unbonded asbestos fiber
- Activities prohibited by legislation of the country in which the Project is located or by international conventions relating to the protection of biodiversity resources or cultural resources, such as, Bonn Convention, Ramsar Convention, World Heritage Convention and Convention on Biological Diversity.
- Commercial logging operations or the purchase of logging equipment for use in primary tropical moist forests or old-growth forests
- Production or trade in wood or other forestry products other than from sustainably managed forests
- Marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats
- Shipment of oil or other hazardous substances in tankers that do not comply with IMO requirements (IMO, MARPOL, SOLAS and Paris MOU)

For the latest version of the AIIB Environmental and Social Exclusion List please refer to AIIB website https://www.aiib.org/en/index.html

Definitions

Forced labor means any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty (including any kind of forced or compulsory labor, such as indentured labor, bonded labor or similar labor-contracting arrangements, or labor by trafficked persons).

Harmful or exploitative forms of child labor means the employment of children under the age of 18 for work which by its nature or the circumstances in which it is carried out is likely to jeopardize their health, safety or morals. However, if the laws or regulations of the country in which the Project is located provide, in conformity with the International Labor Organization's Minimum Age Convention, 1973, that children at least 16 years of age may be employed for such work on condition that their health, safety and morals are fully protected and that they have received adequate specific instruction or vocational training in the relevant branch of activity, then child labor means employment of children for work that does not comply with these laws and regulations.

APPENDIX B ENVIRONMENTAL AND SOCIAL ELIGIBILITY CRITERIA

Topic/aspect	Eligibility criteria	
Sub-projects' Type	+	Sub-projects can comprise the renovation / upgrading of existing road sections (including creation of newly built by-passes)
	-	Sub-projects exclude the construction of major infrastructure such as as new bridges in undisturbed riverine landscapes and tunnels, and construction in densely populated areas (e.g. road widening in village, town or city).
	-	Sub-projects cannot impact international waterways as defined in AIIB's Operational Policy on International Relations
	-	Sub-projects cannot be located in Disputed Areas as defined in AIIB's Operational Policy on International Relations
General	+	All sub-projects to undergo environmental permitting as per RF legislation and obtain Expert Review and Approval
	+	All sub-projects to be assessed against AIIB's Environmental and Social Policy (ESP) and Environmental and Social Standards (ESSs) as per the ESMPF, including preparation of a sub-project specific Environmental and Social Assessment (ESA) and Environmental and Social Management Plan (ESMP and where required specialist studies (e.g. Biodiversity Action Plan (including Biodiversity Offset Plan); Livelihood Restoration Plan; etc.).
	+	The PIU and all sub-project implementation agencies need to have established systems and resources (budget and personnel / consultants) to assess, prepare and implement the sub-projects as per AIIB's requirements stated in the ESMPF, develop a sub-project specific ESMP, monitor its implementation and report accordingly to the PIU and through that one to the Bank.
Biodiversity	-	No interaction (permanent footprint, temporary land use, emissions (e.g. noise, vibration, discharge, etc.), natural resource abstraction, etc.) affecting environmentally and ecologically sensitive area, such as internationally, nationally or locally protected area, conservation area, or critical habitat as defined in AIIB's ESP and determined as per the Critical Habitat Screening comprised in the ESMPF.
	+	Interaction exclusively with modified habitat and in some instances with natural habitat as defined in AIIB's ESP mitigated through offsets ensuring no net loss of biodiversity.
Natural Resources	-	No interaction with, impact on, use of or access restriction to natural resources such as water sources (including surface and ground water), timber, wild fauna, forest products, etc., except for minimized vegetation clearing duly permitted and offset to ensure no net loss of habitat (including fauna and flora).
	+	All impacts on natural resources will be mitigated as per requirements of AIIB's ESP and ESS 1, following methods defined in the ESMPF.
Pollution Prevention	-	No planned discharge into the natural environment during construction, and means to capture unplanned discharges (incidents/accidents)
	+	Means to capture and treat all surface water run-off prior to discharge into the environment in normal operations and Emergency Response Plan in place to address unplanned events in line with RF regulatory requirements and Good International Industry Practice (GIIP) such as the WBG EHS Guidelines.
Land Acquisition & Involuntary Resettlement	-	All land acquisition shall induce no or minimal physical resettlement (less than 50 households/businesses or fewer than 200 individuals affected by physical and/or economic resettlement) along the logical area assessed.
	-	Land acquisition inducing displacement (physical or economic resettlement) can represent no more than 49% of the land used for the sub-project (>51% in existing RoW and/or state-owned land) and shall affect less than a cumulative 200 individuals (see above).
	+	All land acquisition, economic resettlement and physical resettlement shall be subject to the preparation of a sub-project specific RAP (or Simplified Resettlement Plan if impacts are minor), compensated at full replacement value and further mitigated with provision of livelihood support, following proper consultation as per the RPF included in the ESMPF.
Indigenous Peoples	-	No impacts on land and natural resources subject to traditional ownership or under customary occupation or use; no causing involuntary relocation of Indigenous Peoples (IPs)

		from land or limitations on access to natural resources subject to traditional ownership or under customary occupation or use; or no significant impacts on IP's cultural heritage.
	+	In case of presence of IPs in the sub-project's area of influence, IP Screening is required to determine application of ESS-3, in which case an Indigenous Peoples Plan (IPP) needs to be prepared based on the IPP Framework.
	+	Meaningful consultation on the sub-project with Indigenous Peoples communities and concerned Indigenous Peoples organizations present in the Area of Influence is to be conducted in a culturally appropriate, accessible and inclusive manner, to facilitate their informed participation
Cultural Resources	-	No impact on tangible cultural heritage as determined by federal or local regulations, and no impact on natural features and landscapes of religious, aesthetic, or other cultural significance
	+	Development of a Chance Find Procedure and management/protection of Cultural Resources identified in the scope of the sub-project implementation
Health & Safety	-	No structural blasting within 1.5km from any residential structure, no work in confined space (i.e. no tunnel)
	+	Implementation of Good International Industry Practice (GIIP) to manage both Community Health and Safety and Occupational Health and Safety
Stakeholder Engagement, Disclosure	+	All activities will require effective disclosure of project information, including alignment, construction schedule and method, E&S risks and impacts, temporary nuisances/access restrictions, proposed mitigation measures. E&S instruments will be disclosed for no less than 30 days before approving allocation of AIIB's funds.
	+	Meaningful consultation conducted and properly documented with representative number and types of stakeholders at all stages of Project.
Grievance Redress Mechanism (GRM) and AIIB's Project-Affected People's Mechanism (PPM)	+	Project-level and sub-project level GRM are in place and resources are allocated for implementation. The Project-affected people will be informed about the GRM and the Bank's PPM by Rosavtodor during Project preparation and implementation. Where IP are present in the Area of Influence, the GRM must be culturally sensitive to suit IP communities.

APPENDIX C GENERAL SCREENING FORM

The general screening covers all environmental and social aspects of a subproject except for the following aspects:

- Impacts on critical habitats;
- Engagement of indigenous peoples – which is governed by AIIB ESS 3;
- Land acquisition and resettlement.

Questions raised by the general screening process include, but are not limited to, biodiversity, prevention of pollution and depletion of natural resources, cultural resources, community health and safety, and other risks as per applicable standards.

In addition to negative criteria, which will automatically exclude the subproject, the screening or any subsequent assessment may reveal significant adverse environmental and social impacts, which are irreversible, cumulative, diverse or unprecedented. In this case, the subproject will be marked accordingly and most likely will not be supported by the Bank.

General Screening

General

Subproject (short name or number if available)	
Form completed by (Name, position, department)	
Contact details (telephone, e-mail)	
Date	
Signed	

References

General Screening form number (this document)	
Critical Habitat Screening form number	
Land Acquisition and Resettlement Screening form number	
Indigenous Peoples Impact form number	

Comments

Screening for excluded activities and negative criteria

#	Question	Yes	Not
Subproject Type			
1	Does the subproject envisage any activities from AIIB Environmental and Social Exclusion List (Appendix A)?	☐ Subproject has not passed screening	☐ Go to next question
General			
2a	Does the subproject envisage construction of major infrastructure such as bridges with structure (e.g. piles) in water bodies and tunnels?	☐ Subproject has not passed screening	☐ Go to next question
2b	Does the subproject envisage construction in densely populated areas (e.g. road widening in village, town or city)?	☐ Subproject has not passed screening	☐ Go to next question
3	Will the subproject impact international waterways? *International Waterway means:* *(i) a body of surface water that: (A) forms a boundary between, or flows through, two or more countries; (B) is recognized as a necessary channel of communication between the open sea and two or more countries; (C) is a tributary or component of any body of water described above in sub-paragraph 2.1(b)(i)(A) or (B); or (D) is a bay, gulf, strait, or channel and that is bounded by two or more countries; or* *(ii) a body of trans-boundary groundwater.*	☐ Subproject has not passed screening	☐ Go to next question
4	Is the subproject located in located in a Disputed Area? *Disputed Area is territorial area that is claimed by two or more countries.*	☐ Subproject has not passed screening	☐ Go to next question
Biodiversity			
5	Will the subproject impact environmentally and ecologically sensitive areas? The impact means permanent footprint, temporary land use, emissions (e.g. noise, vibration, discharge, etc.), natural resource abstraction, etc. *Environmentally and ecologically sensitive areas are internationally, nationally or locally protected area, conservation area, or critical habitats.* *Critical habitat is defined as areas with high importance for biodiversity, including: (a) highly threatened or unique ecosystems; (b) habitat important*	☐ Subproject has not passed screening	☐ Go to next question

#	Question	Yes	Not
	to Critically Endangered or Endangered species, as listed on the International Union for the Conservation of Nature (IUCN) Red List of threatened species or under national law; (c) habitat important to endemic or restricted-ranges species; (d) habitat supporting globally or nationally significant concentrations of migratory or congregatory species; or (e) ecological functions or characteristics that are needed to maintaining the viability of the biodiversity features described above in (a) to (d). *For critical habitats, AIIB offers a separate procedure – Critical Habitat Screening, see the Appendix D.*		
Natural Resources			
6a	Does the subproject envisage interaction with, impact on, use of or access restriction to natural resources? *Natural resources include water sources (including surface and ground water), timber, wild fauna, forest products, etc.*	☐ Go to next question	☐ Go to question 7a
6b	Does the subproject envisage minimized vegetation clearing?	☐ Go to next question	☐ Subproject has not passed screening
6c	Is it possible to arrange an official permit to clear vegetation?	☐ Procure the permit Go to next question	☐ Subproject has not passed screening
6d	Does the subproject provide for an offset to ensure no net loss of habitat (including fauna and flora)?	☐ Develop the Biodiversity Action Plan (including the Biodiversity Offset Plan) Go to next question	☐ Subproject has not passed screening
Pollution Prevention			
7a	Does the subproject envisage planned discharges into the natural environment during construction?	☐ Subproject has not passed screening	☐ Go to next question
7b	Does the subproject envisage availability of means to capture unplanned discharges (incidents/accidents)?	☐ Go to next question	☐ Subproject has not passed screening
Health & Safety			
8	Does the subproject envisage structural blasting within 1.5 km from any residential structure or work in height or in confined space (i.e. elevated bridge or tunnel)?	☐ Subproject has not passed screening	☐ Go to next question

#	Question	Yes	Not
Cultural Resources			
9	Does the subproject envisage impact on tangible cultural heritage as determined by federal or local regulations, and or impact on natural features and landscapes of religious, aesthetic, or other cultural significance?	☐ Subproject has not passed screening	☐ Subproject has passed screening

Additional requirements (positive screening criteria)

#	Question	Yes	No
Subproject Type			
10	Does the subproject comprise the renovation / upgrading of existing road sections (including creation of newly built by-passes)?	☐ Go to next question	☐ Go to next question
General			
11	Has the subproject successfully passed the environmental vetting procedure and received all necessary permits required by Russian legislation?	☐ Go to next question	☐ Pass the vetting procedure and obtain the permits under the Russian legislation Go to next question
12	Do all subproject implementation agencies have established systems and resources (budget and personnel / consultants) to assess, prepare and implement the sub-projects as per AIIB's requirements, and to develop and monitoring implementation of a subproject specific ESMP?	☐ Go to next question	☐ Ensure availability of management systems and resources as required by ESMPF. Report to the Bank on the implementation of the ESMP. Go to next question
13	Have the subproject's environmental and social impacts been assessed against AIIB's Environmental and Social Policy (ESP) and Environmental and Social Standards (ESSs)?	☐ Go to next question	☐ Assess the subproject against AIIB ESP and ESS. Prepare of a subproject specific Environmental and Social Assessment (ESA).

#	Question	Yes	No
			Prepare of a subproject specific Environmental and Social Management Plan (ESMP). Go to next question
14	Does the subproject envisage physical or economic resettlement?	☐ Go to next question	☐ Prepare of a subproject specific Land Acquisition and Resettlement Plan (LARP) (or Simplified Resettlement Plan) if impacts are minor. Provide compensation at full replacement value. Prepare a livelihood restoration plan. Go to next question
Biodiversity			
15	Does the subproject envisage minimized vegetation clearing or impact on natural habitats? *Natural habitats are areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition.*	☐ Go to next question	☐ Develop the Biodiversity Action Plan (including the Biodiversity Offset Plan). Provide for an offset to ensure no net loss of habitat. Go to next question
Natural Resources			
16	Have all impacts on natural resources been mitigated as per requirements of AIIB's ESP and ESS 1, following methods defined in the ESMPF?	☐ Go to next question	☐ Develop mitigation measures and include them in the subproject specific Environmental and Social Assessment and the subproject specific Environmental and Social Management Plan (and other documents if necessary). Go to next question
Pollution Prevention			

#	Question	Yes	No
17	Does the subproject envisage means to capture and treat all surface water run-off prior to discharge into the environment in normal operations?	☐ Go to next question	☐ Provide means to capture and treat all surface water run-off prior to discharge into the environment in normal operations. Update the subproject specific Environmental and Social Assessment and the subproject specific Environmental and Social Management Plan (and other documents if necessary) to match the changes in the subproject. Go to next question
18	Is there an Emergency Response Plan in place for the subproject to address unplanned events in line with Russian regulatory requirements and Good International Industry Practice (GIIP) such as the WBG EHS Guidelines?	☐ Go to next question	☐ Prepare the Emergency Response Plan. Go to next question
Cultural Resources			
19	Does the subproject include a Chance Find Procedure and management / protection of Cultural Resources?	☐ Go to next question	☐ Develop the Chance Find Procedure. Go to next question
Health & Safety			
20	Does the subproject envisage implementation of Good International Industry Practice (GIIP) to manage both Community Health and Safety and Occupational Health and Safety?	☐ Go to next question	☐ Provide for implementation of Good International Industry Practice (GIIP) to manage both Community Health and Safety and Occupational Health and Safety. Update the subproject specific Environmental and Social Assessment and the subproject specific Environmental and Social Management Plan (and other documents if

#	Question	Yes	No
			necessary) to match the changes in the subproject. Examples of Good International Industry Practice are given in the WBG EHS general and sector-specific guidelines. Go to next question
Stakeholder Engagement, Disclosure			
21	Has an effective disclosure of all subproject activities been made?	☐ Go to next question	☐ Provide for an effective disclosure of subproject information, including alignment, construction schedule and method, E&S risks and impacts, temporary nuisances / access restrictions, proposed mitigation measures. E&S instruments have to be disclosed for no less than 30 days before approving allocation of AIIB's funds. Go to next question
22	Has meaningful consultation been conducted and properly documented with representative number and types of stakeholders at all stages of the subproject?	☐ Go to next question	☐ Ensure that meaningful consultation is conducted and properly documented with representative number and types of stakeholders at all stages of Project. Go to next question
Grievance Redress Mechanism (GRM) and AIIB's Project-Affected People's Mechanism (PPM)			
23	Is project-level and subproject-level GRM in place and have resources been allocated for implementation? Have the subproject-affected people been informed about the GRM and the Bank's PPM?	☐ The subproject meets positive screening criteria	☐ Develop the Grievance Mechanism. Inform the affected persons about the GRM.

#	Question	Yes	No
			Where Indigenous Peoples are present in the Area of Influence, the GRM must be culturally sensitive to suit Indigenous Peoples communities. The subproject meets positive screening criteria.

APPENDIX D CRITICAL HABITAT SCREENING FORM

Critical habitat is defined as areas with high importance for biodiversity, including:

i) habitat of significant importance to Critically Endangered and/or Endangered species;

ii) habitat of significant importance to endemic and/or restricted-range species;

iii) habitat supporting globally significant concentrations of migratory species and/or congregatory species;

iv) highly threatened and/or unique ecosystems; and/or

v) areas associated with key evolutionary processes.

Critical habitats are areas of high biodiversity value that include at least one or more of the five values above. There is no one criterion that is more important than any other for making critical habitat designations.

To facilitate decision-making, numerical thresholds have been defined for the first four critical habitat criteria published in the IUCN's *A Global Standard for the Identification of Key Biodiversity Areas* and *Red List Categories and Criteria*. The thresholds are indicative and serve as a guideline for decision-making only. There is no universally accepted or automatic formula for making determinations on critical habitat. The involvement of external experts and project-specific assessments is of utmost importance, especially when data are limited.

For Criterion 5, there are no numerical thresholds. Best available scientific information and expert opinion should be used to guide decision-making with respect to the relative "criticality" of a habitat in these cases.

Critical Habitat Screening

General

Subproject (short name or number if available)	
Form completed by (Name, position, department)	
Contact details (telephone, e-mail)	
Date	
Signed	

References

Critical Habitat Screening form number **(**this document)	
General Screening form number	

Comments

Critical Habitat Screening

#	Question	Yes	Not
Stakeholder Consultation/Initial Literature Review			
1a	Has a separate literature review been conducted for the subproject's area of influence?	☐ Go to next question	☐ Perform a separate (independent) review of literature to determine biodiversity components typical for the subproject's area of influence and to understand the environmental context of the area where the subproject is located. Go to next question
1b	Have consultations with relevant stakeholders been conducted in relation to biodiversity components?	☐ Go to next question	☐ Conduct consultations with stakeholders to gather information about biodiversity components within the subproject's area of influence. Relevant stakeholders may include established conservation organizations (including NGOs), governmental or other relevant authorities, academic or other scientific institutions, and recognized external experts, including species specialists. Go to next question
Field Data Collection and Verification of Available Information			
2	Are quantified unaggregated field data/metrics on baseline biodiversity conditions collected as part of the ESIA adequate?	☐ Go to next question	☐ Gather quantified unaggregated field data/metrics on baseline biodiversity conditions. Data can be collected using a combination of methods: for example, biodiversity baseline surveys, focused surveys by specialists, ecological research, expert consultation, and data obtained from recent scientific literature and the Russian

#	Question	Yes	Not
			National Biodiversity Strategy. Information should be gathered on biodiversity components such as species, habitats, ecosystems, evolutionary processes and ecological processes – both within the subproject's area of influence and in the broader national, regional and global contexts, as relevant. Go to next question
Critical Habitat Determination			
Criterion 1: Highly threatened or unique ecosystems			
3a	Have ecosystems within the subproject's area of influence been assessed and included in the IUCN Red List of Threatened Species (https://iucnrle.org/)?	☐ Go to next question	☐ Use ecosystem assessments using systematic methods at the national/regional level, carried out by governmental bodies, recognized academic institutions and/or other relevant qualified organizations (including internationally recognized NGOs). Go to next question
3б	Are areas representing ≥5% of the global extent of an ecosystem type meeting the criteria for IUCN status of CR or EN?	☐ A critical habitat is identified. Include the critical habitat in the Summary. Go to next question	☐ Go to next question
3в	Was the area where the subproject is located or which the subproject impacts determined to be of high priority for biodiversity conservation by regional or national systematic conservation planning or other strategic planning documents?	☐ A critical habitat is identified. Include the critical habitat in the Summary. Go to next question	☐ Go to next question
Criterion 2: Critically Endangered and Endangered Species			
4a	Does the area where the subproject is located or which the subproject impacts support globally important concentrations of an IUCN Red-listed	☐ A critical habitat is identified.	☐ Go to next question

#	Question	Yes	Not
	EN or CR species (≥ 0.5% of the global population AND ≥ 5 reproductive units of a CR or EN species?	Include the critical habitat in the Summary. Go to next question	
4б	Does the area where the subproject is located or which the subproject impacts support globally important concentrations of an IUCN Red-listed Vulnerable (VU) species, the loss of which would result in the change of the IUCN Red List status to EN or CR and meet the thresholds given in Item 4a?	☐ A critical habitat is identified. Include the critical habitat in the Summary. Go to next question	☐ Go to next question
4в	Does the area where the subproject is located or which the subproject impacts contain important concentrations of a nationally or regionally listed (the Red Book of Russia or the Red Book of the Republic of Karelia) EN or CR species?	☐ A critical habitat is identified. Include the critical habitat in the Summary. Go to next question	☐ Go to next question
Criterion 3: Endemic and Restricted-range Species			
5	Does the area where the subproject is located or which the subproject impacts regularly hold ≥10% of the global population size AND ≥10 reproductive units of a species? *For terrestrial vertebrates and plants, restricted-range species are defined as those species that have an extent of occurrence (EOO) of less than 50,000 km2.* *For marine systems, restricted-range species are provisionally being considered those with an EOO of less than 100,000 km2.* *For coastal, riverine, and other aquatic species in habitats that do not exceed 200 km width at any point (for example, rivers), restricted range is defined as having a global range of less than or equal to 500 km linear geographic span (i.e., the distance between occupied locations furthest apart).*	☐ A critical habitat is identified. Include the critical habitat in the Summary. Go to next question	☐ Go to next question
Criterion 4: Migratory and Congregatory Species			
6a	Is the area where the subproject is located or which the subproject impacts known to sustain, on a cyclical or otherwise regular basis, ≥ 1 percent of the global population of a migratory or congregatory species at any point of the species' lifecycle?	☐ A critical habitat is identified. Include the critical habitat in the Summary. Go to next question	☐ Go to next question

#	Question	Yes	Not
6b	Does the area where the subproject is located or which the subproject impacts predictably support ≥10 percent of the global population of a species during periods of environmental stress?	☐ A critical habitat is identified. Include the critical habitat in the Summary. Go to next question	☐ Go to next question
Criterion 5: Ecological functions and characteristics			
7	Does the area where the subproject is located or which the subproject impacts perform the functions or demonstrates characteristics necessary to maintain viability of biodiversity components listed above?	☐ A critical habitat is identified. Include the critical habitat in the Summary. End of screening	☐ End of screening

Summary of the identified critical habitats

Name	Location	Criterion or criteria	Biodiversity component or components	Comments

APPENDIX E PROJECT CATEGORIZATION

Category	Description
A	A Project is categorized A if it is likely to have significant adverse environmental and social impacts that are irreversible, cumulative, diverse or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works and may be temporary or permanent in nature. The Bank requires the Client to conduct an environmental and social impact assessment (ESIA) or equivalent environmental and social assessment, for each Category A Project, and to prepare an ESMP or ESMPF, which is included in the ESIA report for the Project. The ESIA for a Category A Project examines the Project's potential environmental and social impacts, both positive and adverse, compares them with those of feasible alternatives (including the "without Project" situation), and recommends any measures needed to avoid, minimize, mitigate, or compensate for adverse impacts and improve environmental and social performance of the Project.
B	A Project is categorized B when: it has a limited number of potentially adverse environmental and social impacts; the impacts are not unprecedented; few if any of them are irreversible or cumulative; they are limited to the Project area; and can be successfully managed using good practice in an operational setting. The Bank requires the Client to conduct an initial review of the environmental and social implications of the Project. On the basis of this review, the Bank, in consultation with the Client, determines the appropriate instrument for the Client to assess the Project's environmental and social risks and impacts, on a case-by-case basis. The Bank may determine that an environmental and social assessment or another similar instrument is appropriate for the Project. The scope of the assessment may vary from Project to Project, but it is narrower than that of the Category A ESIA. As in the case of a Category A Project, the assessment examines the Project's potentially negative and positive environmental and social impacts and recommends any measures needed to avoid, minimize, mitigate, or compensate for adverse impacts and improve environmental and social performance of the Project.
C	A Project is categorized C when it is likely to have minimal or no adverse environmental and social impacts. The Bank does not require an environmental and social assessment, but does require the Client to conduct a review of the environmental and social implications of the Project.
FI	A Project is categorized FI if the financing structure involves the provision of funds to or through a financial intermediary (FI) for the Project, whereby the Bank delegates to the FI the decision-making on the use of the Bank funds, including the selection, appraisal, approval and monitoring of Bank-financed subprojects. The Bank requires the FI Client, through the implementation of appropriate environmental and social policies and procedures, to screen and categorize subprojects as Category A, B or C; review; conduct due diligence on; and monitor the environmental and social risks and impacts associated with the Bank financed subprojects, all in a manner consistent with this ESP. A Project categorized as FI is also subject to: (a) the Environmental and Social Exclusion List and applicable host country national laws for all Bank-financed subprojects; and (b) the applicable ESSs for the Bank-financed subprojects that are classified as Category A subprojects (and if the Bank so determines, some or all of the Bank-financed subprojects that are classified as Category B subprojects).

APPENDIX F TRAFFIC MANAGEMENT

1.	**General measures for traffic management**
1.1.	Prior to commencement of the works, a Scheme of Transportation Routes will be developed by the General Contractor in order to manage movement of Subproject-related vehicles on public roads and to ensure the bypass of settlements where possible. It will include detailed information on transportation routes, indicating the names and sections of the used roads and streets of settlements and the annual average daily traffic
1.2.	When developing a Scheme of Transportation Routes, the General Contractor shall prioritize the choice of routes to avoid settlements, to minimize movement of Subproject-related vehicles and equipment on local roads and streets of settlements. Priority shall be given to the use of temporary service roads for delivery of cargoes from construction camps to construction sites
1.3.	Based on the Scheme of Transportation Routes, the General Contractor shall develop Health & Safety procedures for transportation of personnel
1.4.	Prior to commencement of the works, the General Contractor shall arrange a system for monitoring quality of road on the routes used by the Subproject to transport personnel and cargoes
1.5.	Repair works at damaged sections of the roads used for transportation will be provided (as agreed with local and regional authorities)
1.6.	Engagement with local authorities on the issue of traffic during construction and development of additional measures if required
1.7.	Ensure that grievance mechanism provides for logging and investigation by assigned specialist of questions and concerns related to motor transportation under the Subproject
1.8.	Daily number of trips taken by the individuals will be limited and rosters will be arranged to prevent overtiredness. The General Contractor shall assess and determine frequencies. Determined frequencies for individuals will be announced weekly. Relevant announcements will also be sent to relevant subcontractors' representatives
1.9.	All vehicle operators will follow national regulations, which state access times and allowable vehicle weight
1.10.	Flagmen will be assigned to direct and coordinate vehicles onsite and offsite when a construction vehicle with an abnormal load will enter the public road from construction access roads, etc.
1.11.	Local Materials will be used where possible to minimize traffic and transport distances
1.12.	In case of transporting the abnormal loads, relevant consultation with national authority will be conducted and suitable routes for transporting abnormal loads will be designated
1.13.	Subproject traffic on the territory of the settlements shall be limited to day time only
1.14.	Visitors shall not be allowed to enter construction camps, sites and quarries with their private cars
1.15.	Site route maps shall be prepared and distributed to all workers. In case of a change on the map, renewed versions shall be distributed accordingly
1.16.	All construction camps, sites and quarries will be fenced to prevent unauthorized access
1.17.	Prior to construction, the General Contractor shall develop safety requirements for the transportation of hazardous materials, including detailed procedure for transport of hazardous materials, hazardous materials management plan and adequate emergency response plans
1.18.	Before being able to access a construction site, employees, subcontractors and all visitors shall be trained for basic HSE Site rules
1.19.	Provision of insurance for drivers and vehicles involved in the Subproject. Insurance shall provide for the third party liability and cover the damage to third parties in full

2.	**General measures for vehicle movement at Subproject sites**
2.1.	Vehicles at the Subproject sites shall be operated at a speed limit of 30 km/h as specified by the traffic signs
2.2.	Adequate lighting for night time construction works will be provided according to best occupational safety practices. The lighting system will not inhibit the vision of drivers onsite and offsite.
2.3.	Flagmen will be assigned to direct and coordinate vehicles onsite and offsite when a two way road is reduced to one lane because of construction activities.
2.4.	Construction vehicles will not be permitted to drive beyond the bounds of the designated transport routes
3.	**General measures for transportation between Subproject facilities by public roads**
3.1.	Prior to commencement of the works, analysis of the adequacy of road signs and other security measures in areas of the most intensive traffic and near settlements.
3.2.	Engagement with local authorities responsible for the road safety will be conducted based on the results of the analysis for the installation of additional traffic signs, speed control bumps, etc.
3.3.	The condition of the roads shall be inspected regularly and necessary repair and maintenance activities shall be conducted. Inspections to assess the road condition shall be performed at least twice a year, in spring and autumn.
3.4.	Limitation of the speed of the Subproject transport within the settlements and on local and unpaved roads - up to 30 km/ h, on regional and national roads - to the minimum permitted speed
4.	**General measures for transportation of personnel**
4.1.	General Contractor shall provide organized transport to and from the Subproject sites and facilities
4.2.	Prior to construction works, General Contractor shall determine the number of workers and places of their origin
4.3.	For non-local workers, prior commencement of construction works the General Contractor shall determine the ways of transportation to the construction camps (air travel, railway transportation, road transport) and the number of people per type of transportation
4.4.	Prior commencement of construction works the General Contractor shall develop specific health and safety procedures for each type of workers' transportation to the camps, given the number of workers to be transported; some measures aimed at reduction of health and safety risks related to transportation of workers may be as follows: ■ time of transfer from one type of transport to another will be reduced to minimum; ■ in case of railway transportation of large number of workers, it is necessary to buy tickets for the whole car(s) in order to minimize the number of interactions between workers and local people; tickets must be purchased in advance and in cooperation with railway administration in order to prevent lack of tickets for local residents; ■ in case of the bus transportation, safety precautions should be implemented, e.g. vehicle maintenance checks, alcohol tests for drivers, etc.;
4.5.	Prior commencement of construction works the General Contractor shall develop specific health and safety procedures for transportation of workers from camps to construction sites
4.6.	When workers travel to the sites by car, these sites should be provided with parking space (size of parking space would depend on the number of workers traveling by cars, this shall be ensured prior the commencement of construction works) with necessary safety precaution
4.7.	When workers travel to the sites by public transport, gathering points should be determined close to public transport stops. Means of transportation for workers from gathering points to construction sites should be ensured taking into account health and safety procedures (see paragraph above)
4.8.	The above requirements and mitigation measures should also apply to all sub-contractors

5.	**General requirements to drivers and vehicles**
5.1.	To minimize and prevent mechanical failures, regular maintenance of vehicles will be undertaken in accordance with manufacturer manuals and manufacturer approved parts will be used if any replacements are needed
5.2.	Regular trainings for drivers on the Subproject requirements to the traffic safety, limitations and restrictions, adopted by the Subproject
5.3.	In order to ensure compliance with alcohol and/or drug use rules for drivers; random and post incident/accident drug and/or alcohol testing will be conducted
5.4.	Drivers shall undergo medical surveillance
5.5.	All vehicles will be equipped with safety equipment (e.g. safety belts, safety lights, reversing alerts, and first aid kits)
5.6.	All vehicles will be provided with the Subproject's logo, telephone numbers for feedback in case the driver violates the traffic rules. Ensure that complaints related to road safety are considered as soon as possible (see details in the *SEP*)
6.	**Monitoring of driver behavior**
6.1.	Monitoring of the drivers behavior will be conducted by the Subproject through the implementation of monitoring systems by the contractors and sub-contractors. Following measures or their equivalent will be implemented: ■ In-Vehicle Monitoring – Audible alerts received by a driver and notification of relevant supervisor; ■ Driver Behavior Reports – Individual reports of the drivers constituted by audible alerts and real time observations, if applicable; ■ Warning – Irresponsible behaviors should be responded by appropriate warnings; ■ Record Keeping –Relevant recording of cases of irresponsible behaviors and traffic incidents.

APPENDIX G CHANCE FIND PROCEDURE

CHANCE FIND PROCEDURE

Summary

The purpose of this document is to address the possibility of archaeological deposits becoming exposed during ground altering activities within the project area and to provide protocols to follow in the case of a chance archaeological find to ensure that archaeological sites are documented and protected as required.

Archaeological sites are protected by the legislation of the Russian Federation. They are non-renewable, very susceptible to disturbance and are finite in number. Archaeological sites are an important resource that is protected for their historical, cultural, scientific and educational value to the general public and local communities. Impacts to archaeological sites must be avoided or managed by development proponents.

The objectives of this Procedure are to promote preservation of archaeological data while minimizing disruption of construction scheduling. It is recommended that due to the moderate to high archaeological potential of some areas within the project area, all on site personnel and contractors be informed of the Chance Find Procedure and have access to a copy while on site.

Potential Impacts to Archaeological Sites

Developments that involve excavation, movement, or disturbance of soils have the potential to impact archaeological materials, if present. Activities such as road construction, land clearing, and excavation are all examples of activities that may adversely affect archaeological deposits.

Archaeological Chance Find Procedure

This procedure has been developed in the case that an archaeological or heritage resource site is encountered on the Subproject. In general, chance finds that may be visible on a construction project include:

- Rock art, including pictographs and petroglyphs.
- Tree art and Culturally Modified Trees (CMT'S) such as bark stripping and planks.
- Surface features such as depressions created by former habitations, earthen fortifications, rock cairns, fish traps, clam gardens, burned rock and midden.
- Artefacts that have become visible on the land surface owing to erosion or recent land altering activity. These may be produced in a variety of materials such as stone, bone, antler, wood, or shell.
- Buried cultural remains that may be sighted in a cut-bank, excavation.

Procedure to follow if a possible archaeological or heritage significance is encountered / suspected:

Responsible Parties	Required Actions
Project Personnel are not permitted to take or keep artefacts as personal possessions.	
Subproject Personnel at Sites and Facilities	1. Stop construction activities or other work that could have a detrimental impact in the immediate vicinity. DO NOT DISTURB THE SITE. 2. Inform site supervisor/foreman. 3. Install temporary site protection measures (warning tape and stakes, avoidance signs). 4. Inform all personnel of the Chance Find if access to any part of the work area is restricted. 5. Establish a localized no-go area needed to protect the Chance Find. 6. Document find through photography, notes, GPS coordinates, and maps (collect spatial data) as appropriate. 7. Immediately contact PIU Social Expert(s).

	8. If you discover what you suspect may be a possible human remains, the local policing authority to be notified in order to determine whether the matter is of contemporary forensic concern.
PIU Social Expert(s)	1. Based on the provided information, log the event including the time of encounter, description of the construction /operational activity and the archaeological/heritage material of concern. 2. Inform the HSES Manager on the event. 3. Contact the designated archaeologist for the Project or licensed subcontractor and the responsible authorities (Ministry of Culture and its territorial departments). The archaeologist and authorities' representatives will advise on further action. 4. Continue to record all pertinent discussions/correspondence with all parties relating to the event.
PIU HSES Manager PIU Social Expert(s)	1. Confirm the order to stop work in the vicinity of the chance find and direct the Contractor to place boundary markers around the found archaeological or heritage material. 2. Authorize access to the territory for archaeologists and the responsible authorities for the preliminary assessment of the find.

If the Chance Find proves the find is not cultural heritage

PIU HSES Manager	1. Authorize the removal of site protection measures in order to resume activity in the vicinity of the site.

If the archaeological specialists confirm the Chance Find is a cultural heritage

PIU Project Manager	1. Initiate discussions with the archaeological specialists and the authorities about treatment, mitigation measures and rescue excavations. 2. If treatment and potential mitigation measures to be implemented would impact the Project implementation schedule, inform PIU and Rosavtodor management. 3. While investigation is ongoing, co-ordinate with on-site Subproject personnel keeping them informed as to status and schedule of investigations, and informing them when the construction may resume.
PIU Social Expert(s)	1. Develop and implement treatment plans for confirmed finds using the services of qualified cultural heritage experts. 2. Prepare a final Chance Finds report once treatment has been complete

APPENDIX H CHECKLIST FOR INSPECTIONS AND AUDITS DURING THE CONSTRUCTION PHASE

Note: this form is an outline only and cannot be considered as exhaustive. It shall be adopted for individual sub-projects and implementation of appropriate mitigation measures.

Checklist for inspections and audits during the construction phase

General

Subproject (short name or number if available)	
Objects to be checked	
Stages of the subproject **(construction phase, types of works)**	
Form completed by (Name, position, department)	
Contact details (telephone, e-mail)	
Date	
Weather conditions	
Signed	

Comments

Impacts and issues	Implementation			Comment
	Yes	No	N/A	
Impact on air quality (gaseous emissions)				
At the locations of sensitive recipients are installed and properly functioning system of forced filtration / ventilation etc.				
Equipment and vehicles used at on the site complies with the standard not lower than Euro-3				
Diesel generators are equipped with properly functioning systems to reduce emissions of nitrogen oxides				
No machinery and equipment operating in idle mode on the site				
The number of simultaneously working equipment corresponds to the work plan and / or management Plans (minimum in the current conditions)				
The equipment is not operated under adverse meteorological conditions (for example, inversion)				
Reports on timely preventive maintenance of engines of construction equipment and vehicles are available, there are no visual signs of malfunctions of engines of the equipment working on object				
Documentation is available to confirm all equipment and vehicles operating on the site has timely passed inspection and verification of toxicity of exhaust gases				
There is no incineration of waste (including felling residues) at the site, there are no traces of incineration of waste at the site and in its surroundings				
Low-sulfur fuel of the standard not lower than Euro-5 is used at construction site (shall be confirmed by documents)				
Drivers use safe and fuel-saving driving techniques				
Impact on air quality (dust)				
On-site and off-site dirt roads, sites with a dirt surface are regularly watered in dry weather				
Earthworks are not carried out in strong winds				
Backfilling is carried out according to the work plan and / or management Plans (for the minimum time after excavation)				
Open areas with minimal traffic are covered or grass-covered				
Speed limit signs (15 km / h) on intra-site driveways are installed and clearly visible, transport moves without speeding				

Impacts and issues	Implementation			Comment
	Yes	No	N/A	
Impact on air quality (odors)				
Water-based paints are used on site, the use of paints on organic solvents is limited				
Noise and vibration effects				
Noisy works are carried out only in the daytime				
The number of simultaneously operating noisy equipment corresponds to the work plan and / or management Plans (minimum in the current conditions)				
Noisy equipment is placed at the maximum possible distance from sensitive recipients (houses, builders ' towns, habitats, etc.)				
Anti-noise enclosures and enclosures are installed where required by the work plan and / or Management Plans				
Trailers in construction camps are equipped with serviceable means of sound insulation as envisaged by Management Plans				
Impacts on subsoil and soil cover				
Reclamation was carried out on the disturbed lands in accordance with the reclamation project				
Works on strengthening of slopes of a cloth of the road, a bottom of ditches, new channels, etc. are carried out				
The removed fertile layer of soil is stored in pits				
Quarry closure plan (if any quarry is involved in the Project) developed and implemented *(monitoring of the implementation of quarry closure plans is carried out according to separate check lists)*				
Contracts for the transportation of solid and liquid waste are made with licensed contractors, the transportation is carried out according to the terms of the contracts				
Machinery and equipment on the site have no malfunctions, no traces of leaks of fuel, lubricants, working fluids, etc.				
The wastewater collection and treatment system at the facility is installed and functioning properly, the discharge of untreated wastewater to the environment does not occur				
Septic tanks and composting toilets are installed and functioning properly				

Impacts and issues	Implementation			Comment
	Yes	No	N/A	
An impermeable cover has been installed at the equipment maintenance sites and temporary waste accumulation sites, the coating has no signs of permeability (cracks, holes, chips, etc.)				
Impacts on groundwater				
All necessary permits and approvals have been obtained for the water intake facilities, the water intake (s) operates in accordance with the received permits				
Water metering devices are installed on the site (at the water intake, in the construction camp, etc.)				
Water reuse technologies are used in production (for example, water reuse in the concrete production)				
The storm water collection and treatment system for the operation phase is planned and installed during the construction phase				
Quarry (if any quarry is involved in the Project) is equipped with drainage systems of sufficient capacity, no signs of drainage system malfunctions were detected				
The staff is trained in water-saving behavior (confirmed by the program and the instruction log), applies the skills acquired				
Impacts on surface waters				
The regime of water protection zones and coastal protective strips is observed, fences / signs are installed to prevent violations				
Works within river floodplains are carried out only in the inter-temperate period				
At the crossings of small watercourses: the construction of the crossing is performed without affecting the channel (the appropriate design shall be provided by the project documentation)				
Where practicable, small valleys and logs within the construction area are covered with metal plates, for possible passage of construction equipment, or transferred with the help of drainage pipes for the organization of free water flow				
Preservation of the water regime, natural areas of channels, bottom sediments and floodplains is maintained (the appropriate design shall be provided by the project documentation)				
The maximum possible use of natural materials (lawn, trees) in combination with steel structures (gabions) to protect and stabilize the banks, instead of				

Impacts and issues	Implementation			Comment
	Yes	No	N/A	
monolithic concrete (the appropriate design shall be provided by the project documentation)				
In case of transfer of channels-the device of tortuous (instead of direct) new channels with asymmetric shutters and a natural (ground) bottom (the appropriate design shall be provided by the project documentation)				
In the period of heavy rainfall, no work is carried out which can trigger the formation of a large volume of suspended solids, if necessary, the shelter of open surfaces and storage areas is made				
Slurry water of concrete plants and water from washing cement trucks is disposed of (or reused) in accordance with the legislation of the Russian Federation				
The Emergency Response Plan is available and prepared in accordance with the regulatory requirements of the Russian Federation and good international industry practice				
Impact on visual properties of landscape				
If necessary, protective landscaping along the new road is organized (the appropriate design shall be provided by the project documentation)				
Lighting of construction sites is designed and installed taking into account the impact on nearby residential buildings (light brightness during the night is limited, the height of the masts is selected in such a way as not to give direct light to the Windows, etc.)				
If necessary, opaque and translucent fences of the construction site are installed				
Impact on biodiversity				
Compensation of damage to forest, hunting and fishing resources was carried out in accordance with the requirements of national legislation				
The movement of construction equipment and vehicles is limited by the construction site and access roads, there are no signs of movement outside the permitted boundaries (no ruts, no complaints of local residents, etc.)				
Drivers and staff are instructed on attitude of care for flora and fauna, and apply the knowledge in practice				
If necessary, construction sites have fencing to prevent the entry and death of animals as a result of accidents				

Impacts and issues	Implementation			Comment
	Yes	No	N/A	
Felling and clearing of construction sites is carried out as far as possible in stages, in late autumn and / or winter				
Felling residues are stored in designated areas				
There is a ban on unauthorized collection of wild plants and hunting and fishing in the vicinity of construction sites and construction camps				
An expert has been engaged to carry out work in areas with the greatest risk to biodiversity				
Works on water bodies are not carried out during mass spawning and migration of fish				
Wheel washing facilities are installed and used at the entrances and exits of the facility				
Only native plant species are used in landscaping and reclamation, invasive alien species are not used				
Impact on cultural heritage				
Chance find procedure has been developed, the employees of the General Contractor and the Subcontractors are aware of it and familiar with it				
Protected areas of cultural heritage sites are observed				
Impact on businesses				
Temporary access to all affected commercial enterprises (additional congresses, bypass routes, etc.) is provided				
Construction sites and traffic routes of construction equipment are limited to permanent and temporary allotment plots and public roads; storage of building materials and movement of equipment on private land is not performed without approval of the owner				
Affected business representatives aware of the Grievance Redress Mechanism				
Impact on engineering infrastructure				
Technical conditions for the relocation of communications are received, the schedule and mitigation measures are agreed with the owners of the communications				
Impact on road infrastructure and traffic				
Temporary detours provided				

Impacts and issues	Implementation			Comment
	Yes	No	N/A	
Additional road signs set				
The work schedule takes into account changes in traffic intensity in the reconstructed area during the day and seasons				
Information on the types and schedule of work is pre-posted on the website, information boards, stands and transmitted to affected parties in the ways that ensure proper coverage				
A road quality audit on the roads that will be used for the transportation of goods and subproject personnel was carried out before the start of transportation				
Damaged sections of roads that will be used for transportation of goods and personnel of the subproject are repaired				
Public Health and Safety				
The schedule and mitigation measures are agreed with the affected social infrastructure facilities				
Quarries: the quarry site is fenced, an information board is installed, reclamation of the quarry is provided (see above), consultations with the local population on the implementation of additional measures (improvement of the quarry territory and recreation area) were held				
Influx of shift workers				
Code of conduct for employees has been developed, employees are aware of its availability and content				
The Rules of workers' accommodation are have been developed, employees are aware of their availability and content				
There are medical services in construction camps				
All employees passed health assessments before hiring				
All workers residing in construction camps are vaccinated in accordance with national requirements.				
All employees are informed about the dangers of spreading STDs and methods of prevention through introductory safety training and regular safety training; Condoms available free of charge				
Local population is aware of the Grievance Redress Mechanism				
Security service				

Impacts and issues	Implementation			Comment
	Yes	No	N/A	
The rules of action for protection in conflict situations have been developed, the security are aware of its availability and content				
Regular training of security personnel on how to interact with local residents and training on human rights guidelines; security personnel at the facility underwent training on the following guidance documents: ■ UN Guidelines on Business and Human Rights (2011), ■ International Code of Conduct for Private Security Service Providers (2010), ■ Voluntary Principles of Security and Human Rights (2000).				
Security staff rewards and sanctions are provided				
Impacts on indigenous peoples				
Actions of the Indigenous People Management Plan are fully implemented and on time				
Actions of the Stakeholder Engagement Plan are implemented in full and on time.				
Indicators have been developed and applied to monitor the impact on the indigenous peoples.				
Grievance Redress Mechanism takes into account issues and characteristics of the indigenous peoples				
Indigenous people aware of the Grievance Redress Mechanism				
Other impacts and issues				

Impacts and issues	Implementation			Comment
	Yes	No	N/A	

APPENDIX I CHECKLISTS FOR INSPECTIONS AND AUDITS AT THE OPERATION PHASE

Note: this form is an outline only and cannot be considered as exhaustive. It shall be adopted for individual sub-projects and implementation of appropriate mitigation measures.

Checklist for inspections and audits during the construction phase

General	
Subproject (short name or number if available)	
Objects to be checked	
Stages of the subproject **(construction phase, types of works)**	
Form completed by (Name, position, department)	
Contact details (telephone, e-mail)	
Date	
Weather conditions	
Signed	

Comments

Impact/issue	Implementation			Comment
	Yes	No	N/A	
Impact on air quality				
Air quality monitoring is conducted in accordance with the approved monitoring program				
The road surface, the strengthening of roadsides, the soil and vegetation layer of slopes, etc. are not disturbed				
Road cleaning is done in a timely manner				
Under appropriate conditions, anti-icing agents are used.				
Forced filtration / ventilation systems, etc. (if necessary) have been installed and are functioning properly at the locations of sensitive recipients)				
Noise and vibration effects				
In the places defined by the project documentation, serviceable means of noise protection are installed (noise screens, berms, slopes, etc.)				
If necessary, noise protection devices (noise protection windows, etc.) are installed and function properly in the locations of sensitive recipients				
Noise and vibration levels are monitored in accordance with the approved monitoring program				
Impacts on mineral resources and soil cover, surface water and groundwater				
Drainage infrastructure is installed and functioning normally				
Lawn and landscaping elements of protection are integral and not disturbed				
Operated areas and driveways are kept clean				
The equipment used for works has no signs of malfunctions				
Deicing agents are used only within the limits of the roadway				
Mechanical means are used as primarily anti-icing agents (brushes and snowplows), if use of chemicals is required, the least toxic are chosen (eg, calcium chloride, inhibited phosphate or calcium-magnesium-acetate)				
An Emergency Response Plan is available and prepared in accordance with the regulatory requirements of the Russian Federation and good international industry practice				
Impact on biodiversity				
Road signs have been installed in areas of possible wildlife crossings				

Impact/issue	Implementation			Comment
	Yes	No	N/A	
Monitoring the effectiveness of wildlife crossings (if any), absence of invasive species				
Impact of global climate change				
Operational activities include procedures for responding to natural disasters that are possible in accordance with the forecast of climate change				
Climate data are included in the monitoring program				
Interaction with local authorities of civil defense and emergency situations is conducted for timely notification of the supposed dangerous natural phenomena				
Impact on road safety				
Temporary detours are provided for the duration of the repair				
Additional road signs are set for the duration of the repair				
The repair work schedule takes into account changes in traffic intensity in the reconstructed area during the day and seasons				
Information on the types and schedule of repair work is pre-posted on the website, information boards, stands and transmitted to affected parties in the ways that ensure proper coverage				
Impacts on indigenous peoples				
Actions of the Indigenous People Management Plan are fully implemented and on time				
Actions of the Stakeholder Engagement Plan are implemented in full and on time.				
Indicators have been developed and applied to monitor the impact on the indigenous peoples.				
Grievance Redress Mechanism takes into account issues and characteristics of the indigenous peoples				
Indigenous people aware of the Grievance Redress Mechanism				
Other impacts				

Impact/issue	Implementation			Comment
	Yes	No	N/A	

APPENDIX J EXEMPLARY ENVIRONMENTAL MONITORING PLAN

Actions / parameters (indicators)	Monitoring point / area	Frequency	Recommended methods of implementation
CONSTRUCTION PHASE			
AMBIENT AIR QUALITY			
Sampling of ambient air for the following tests: CO, NOx, hydrocarbons, SO_2, PM_{10}, $PM_{2,5}$	In the area of settlements and shift camps. The monitoring points planned during the background surveys are used for comparison with the monitoring data during the construction phase	Quarterly and on the received complain	In accordance with the methodological regulations of the Russian Federation and / or internationally recognized guidelines
Collection of information about consumption of energy sources	Construction vehicles, mechanisms, machinery and facilities on construction sites, camps and quarries	Annually	In accordance with the methodological regulations of the Russian Federation and / or internationally recognized guidelines
Technical inspection and engine exhaust tests (NOx, SO_2 and solid particles) for machinery and vehicles with internal combustion engines		At least annual scheduled tests and also after every engine overhaul or adjustment	In accordance with the methodological regulations of the Russian Federation and / or internationally recognized guidelines
NOISE LEVELS			
Instrumental measurements of noise levels	In the area of settlements and shift camps. The monitoring points planned during the background surveys are used for comparison with the monitoring data during the construction phase	Quarterly at night and daytime and on the received complain	In accordance with the methodological regulations of the Russian Federation and / or internationally recognized guidelines
GEOLOGICAL ENVIRONMENT AND TOPOGRAPHY			
Monitoring of adverse exogenous processes (route-based observations)	Construction sites, quarries and at storage areas of topsoil/soil and other bulk materials	Every six months during transitional seasons	Standard methods of remote sensing data interpretation, landscape and geomorphological descriptions, cataloguing and mapping of exogenous process development areas
GROUNDWATER			
Water sampling, analysis of the content of pollutants and other parameters in water from monitoring wells, equipped in camps and quarries: pH, odor, turbidity, petroleum products, ammonium nitrogen, nitrate ion	The monitoring wells near domestic wastewater storage tanks at camps and quarries	Before the commencement of works and then monthly	Standard methods of sampling in accordance with the regulations
Pollutants, indicators for which the MPC was exceeded or increased background concentrations were observed during surveys; microbiological indicators		Quarterly	
SURFACE WATER			
Water and bottom sediments sampling, analysis of the content of pollutants and other parameters in surface water: pH, BOD5, COD, total nitrogen, dissolved oxygen, suspended solids, color, odor	Projected crossings with the following water bodies. Monitoring points along the route are intended for initial (baseline) sampling to compare with the construction stage monitoring data	Before the commencement of works and then monthly	Standard methods of sampling in accordance with the regulations

Actions / parameters (indicators)	Monitoring point / area	Frequency	Recommended methods of implementation
Pollutants, indicators for which the MPC was exceeded or increased background concentrations were observed during surveys		Quarterly	
SOIL AND VEGETATION COVER			
Soil sampling, analysis of the content of pollutants and other parameters for which the MPC was exceeded or increased background concentrations were observed during surveys; microbiological indicators	The monitoring points planned during the background surveys are used for comparison with the monitoring data during the construction phase	Before the commencement of works and then every 6 months	Standard methods of sampling in accordance with the regulations
Organization of monitoring sites with a description of the species composition of vegetation, abundance, completeness and condition of species. Identification of alien species			Standard geo-botanical sites associated with soil sampling points within natural habitats
WILDLIFE			
Route-based zoological monitoring and accounting. Identification of alien species (feral domestic animals, epidemiologically dangerous synathrophic species)	Route-based observations at key areas identified during baseline surveys	Every 6 months (including migration periods)	Standard methods of zoological survey and accounting
OPERATIONAL PHASE			
AMBIENT AIR QUALITY			
Sampling of ambient air for the following tests: CO, NOx, hydrocarbons, SO_2, PM_{10}, $PM_{2,5}$	On the borders of settlements along the Rights Of Way	Quarterly	
Collection of information about consumption of energy sources	Road maintenance vehicles, mechanisms, machinery based in the RMF	Annually	
Technical inspection and engine exhaust tests (NOx, SO_2 and solid particles) for machinery and vehicles with internal combustion engines	Road maintenance vehicles and other machinery with internal combustion engines	At least annual scheduled tests and also after every engine overhaul or adjustment	
NOISE LEVELS			
Instrumental measurements of noise levels	On the borders of settlements along the Rights Of Way	Quarterly at night and daytime	
GEOLOGICAL ENVIRONMENT AND TOPOGRAPHY			
Monitoring of adverse exogenous processes (route-based observations)	Along the roadway, especially at intersections at the route crossings	Every six months during transitional seasons	Standard methods of remote sensing data interpretation, landscape and geomorphological descriptions, cataloguing and mapping of exogenous process development areas
GROUNDWATER			
Water sampling, analysis of the content of pollutants and other parameters in water from observation wells, equipped in places of storm water discharge	Along the roadway	Quarterly	Standard methods of sampling in accordance with the regulations

Actions / parameters (indicators)	Monitoring point / area	Frequency	Recommended methods of implementation
SURFACE WATER BODIES			
Water and bottom sediments sampling, analysis of the content of pollutants and other parameters (upstream and downstream of the crossings)	Along the roadway	Quarterly	Standard methods of sampling in accordance with the regulations
SOIL AND VEGETATION COVER			
Soil sampling, analysis of the content of pollutants and other parameters for which the MPC was exceeded or increased background concentrations were observed during surveys; microbiological indicators	Along the roadway	2 times a year during snowless (frostless season) period of the year	Standard methods of sampling in accordance with the regulations
Species composition of vegetation, abundance, completeness and condition of species. Identification of alien species		Annually, in the vegetational season	Standard geobotanical sites associated with soil sampling points within natural habitats
WILDLIFE			
Route-based zoological monitoring. Identification of alien species	Along the roadway	Every 6 months (including migration periods)	Standard methods of zoological survey and accounting

APPENDIX K EXEMPLARY SOCIAL MONITORING PLAN

Actions / parameters (indicators)	Monitoring point / area	Frequency	Recommended methods of implementation
CONSTRUCTION PHASE			
Monitoring the implementation of the Traffic Management Plan	At construction sites and on routes for transporting goods and personnel	Daily, weekly	Visual inspection
Grievance Monitoring (GRM)	See GRM	See GRM	See GRM
Monitoring of living conditions in the construction camps	Construction camps	Daily, weekly	Visual inspection
OPERATIONAL PHASE			
Grievance Monitoring (GRM)	See GRM	See GRM	See GRM
Road Condition Monitoring	Subproject route	Semiannually	Visual inspection