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ASIAN INFRASTRUCTURE INVESTMENT BANK

“Avtoyulinvest” Agency

under the Committee for Roads

Environmental and Social Management Planning Framework

PROJECT: **Bukhara Road Network Improvement Project, Phase 1.**

ASSIGNMENT: ***Preparation of Environmental and Social Management Planning Framework for Karakalpakstan and Khorezm Local Roads Network Reconstruction Project.***

CONTRACT: **KKLRNP/LCS/01**

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PREPARATION OF ESMPF FOR KARAKALPAKSTAN AND KHOREZM LOCAL ROADS NETWORK RECONSTRUCTION PROJECT

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLANNING FRAMEWORK

Karakalpakstan and Khorezm Local Roads Network Reconstruction Project

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LIST OF ABBREVIATIONS

ACMMP	Asbestos-Containing Materials Management Plan
AIIB	Asian Infrastructure Investment Bank
AIA	Avtoyulinvest Agency
CCMP	Construction Camp Management Plan
CNR	Construction Norms and Rules
CPR	Common Property Resources
CR	Committee for Roads
CSEE	The Center of State Environmental Examination
DDR	Due Diligence Report
EA	Executing Agency
EBRD	The European Bank for Reconstruction and Development
EkoStandart	“Ekostandart Ekspert” LLC
EHS	Environmental, Health, and Safety
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
ESEL	Environmental and Social Exclusion List
ESF	Environmental and Social Framework
ESG	Environmental, Social and Governance
ESMPF	Environmental and Social Management Planning Framework
ESP	Environmental and Social Policy
ESS	Environmental and Social Standards
FAO	Food and Agriculture Organization of the United
GAP	Gender Action Plan
GHG	Greenhouse Gas
GRM	Grievance Redress Mechanism
HIV	Human immunodeficiency virus
IA	Implementation Agency
IFC	International Finance Corporation
IFI	International Financial Institutions
IUCN	International Union for the Conservation of Nature
LABR	Low-Amudarya Biosphere Reserve
LARP	Land Acquisition and Resettlement Plan
LAIR	Land Acquisition and Involuntary Resettlement
LLA	Land Lease Agreement
LRNRP	Local Roads Network Rehabilitation Project
MEEPCC	Ministry of Ecology, Environmental Protection and Climate Change
MoELR	The Ministry of Employment and Labor Relations of the RUz

MPC	Maximum Permissible Concentrations
MSW	Municipal Solid Waste
NGO	Non-Governmental Organization
OHSP	Occupational Health and Safety Plan
PCB	Polychlorinated biphenyl
PE	Polyethylene
PEIS	Preliminary Environmental Impact Statement
PIP	Priority Investment Program
PIU	Project Implementation Unit
PMC	Project Management Consultant
RAP	Resettlement Action Plan
RoK	Republic of Karakalpakstan
RCM	Resolution of the Cabinet of Ministers of RUz
RPF	Resettlement Planning Framework
RPLUS	Rhythm Plus LLC, Uzbekistan
RUz	The RUz
SanR&N	Sanitary Rules and Norms
SEC	State Environmental Consequences
SEE	State Environmental Expertise
SEP	Stakeholder Engagement Plan
SMP	Spoil Management Plan
SRP	Spill Response Plan
SSESMP	Site-specific Environmental and Social Management plan
TA	Technical Assistance
TMP	Traffic Management Plan
TOR	Terms of reference
TRTA	Transaction Technical Assistance
UN	The United Nations
UZRDB	The Red Data Book of Uzbekistan
WHO	The World Health Organization
WMP	Waste Management Plan

EXECUTIVE SUMMARY

The Government of the Republic of Uzbekistan (RUz) is preparing to receive a proposed investment loan from the Asian Infrastructure Investment Bank (AIIB) to finance the Rehabilitation of the Local Roads Network in Karakalpakstan and Khorezm Project.

The Project is assumed period of 3 years construction (2025-2027), followed by a two-year maintenance after operation and afterwards 22 years of operations (2028-2049).

Planned activities under the proposed AIIB-financed Project include investments in reconstruction and reconstruction 516 km of local roads in the Republic of Karakalpakstan (encompassing 23 road sections spanning 328 km across 11 districts) and in the Khorezm Region (16 road sections covering 188 km across 9 districts). Additionally, the Project includes capacity building activities for the PIU and the development of a digital geospatial platform and Women and Youth Empowerment Program.

The Project aims to enhance connectivity among communities by integrating specific local roads into both international and regional road networks. This integration will grant local communities improved access to vital social services and promote economic development. This initiative will significantly contribute to the creation of a reliable and secure internal and regional transportation network within the regions.

The Project consists of three components:

Component 1. Reconstruction of the Local Roads in Karakalpakstan and Khorezm. This component focuses on the reconstruction of local roads in the Republic of Karakalpakstan and the Khorezm region. The reconstruction works include pavement reconstruction, bridge repair and construction, drainage improvements, and the installation of road safety measures such as signs, barriers, pedestrian crossings, and bus stops. Where necessary, sidewalks will be added to improve pedestrian safety.
Climate resilience measures, such as the use of durable pavement materials and enhanced drainage systems to cope with higher temperatures and seasonal flooding, will be integrated. No capacity expansion is planned, and road reconstruction will remain within the existing corridors.
The Project also includes two years of road maintenance to ensure sustainability and aligns with the Government's strategy to involve the public sector in road maintenance. Timely maintenance will help mitigate damage from extreme weather due to climate change, enhancing the climate resiliency of the roads.
Additionally, the component will fund the hiring of a Construction Supervision Consultant to oversee the entire construction process, including the review of climate-resilient measures to ensure proper adaptation and mitigation efforts are in place, as well as the Road Safety Audit (RSA) in overseeing compliance with contractual obligations and ensuring quality and safety standards. There are three sub-components:
Sub-component 1.1. Reconstruction Works of the Local Road Network in the Republic of Karakalpakstan
Sub-component 1.2. Reconstruction Works of the Local Road Network in Khorezm Region
Sub-component 1.3. Construction Supervision Consultancy
Component 2. Institutional Strengthening and Capacity Building. This component will

support RC's efforts to operationalize the PIU to ensure the quality implementation of the Project. This component will also support institutional strengthening and capacity building for PIU, financial audit and other operational costs of the PIU.

Component 3. Development of Digital Geospatial Platform and Women and Youth Empowerment Program. There are two sub-components:

Sub-component 3.1. Development of Digital Geospatial Platform

The objective of this sub-component is to create a sophisticated, web-based Geographic Information System (GIS) platform that serves multiple purposes:

Provide an interactive, online tool for construction supervision, enabling real-time monitoring of project implementation, and generating progress and financial reports with visualizations.

Support the evaluation of social and economic benefits derived from improved connectivity, including enhanced access to healthcare, education, and tourism facilities, and the increase in public facilities accessible to the community.

Visualize climate vulnerability and risks affecting each road section to be rehabilitated, while tracking the implementation of climate resilience measures.

Streamline grievance registration and monitoring, allowing PIU, supervision consultants, and RC to manage incoming complaints, generate alerts, and track responses in real-time.

Sub-component 3.2. Women and Youth Empowerment Program

This sub-component focuses on fostering social and economic inclusion, particularly for women and youth, by leveraging the Project's interventions. Key activities to be implemented by the PIU include:

Conducting a scoping study and skills needs assessment to identify potential business and livelihood opportunities for women in the surrounding areas.

Developing a women's entrepreneurship program based on the needs assessment, along with participant selection criteria and a list of potential participants.

Identifying potential sources of grant financing for women entrepreneurs.

Providing training on climate resilience and road maintenance, targeting residents in Project-affected areas, with a special focus on women and youth.

Organizing engaging road safety awareness programs for young people, incorporating educational materials and campaigns on traffic rules and pedestrian safety.

Implementation Arrangements.

The Road Committee (RC) is the Project Implementing Entity (PIE) responsible for overall project coordination with government agencies and high-level decision-making authorities to ensure timely implementation, and for liaison with AIIB and other development partners.

Avtoyulinvest Agency (AYA) as a department under RC, manages the Project's general management and implementation, including progress monitoring, procurement supervision, and works plan review. RC has established a Project Preparation Unit (PPU) under AYA. To date, a Project Coordinator, a Procurement Specialist, and an ES Specialist have been hired. . Upon loan effectiveness, PPU will transform into a full-fledged PIU. The PIU and local sub-PIUs will be responsible for managing the day-to-day project implementation activities, including ensuring the ES compliance of the Project.

Other related to this subcomponent stakeholders include hokimiyats,"Main Road Department of the Republic of Karakalpakstan", "Main Road Department of the Khorezm Region", The Ministry of Ecology and Environment Protection and Climate Change of the Republic of Karakalpakstan (RoK) and Khorezm region (MEEPCC),

Toza Hudud State Unitary Enterprise, which will be involved in evaluation process to ensure their active involvement during project implementation.

Implementing Agency (IA) and Project Implementation Unit (PIU) will be supported by a Construction Supervision Consultant (CSC). The PIU will be responsible for implementation of ESMPF and ESMPs to comply with AIIB safeguards requirements and environmental, social, labour and land acquisition national regulations. Present unit has Environmental and Social Specialist (E&S). Each region's sub-PIU will have, (i) one ES Specialist/Officer and, (ii) one H&S officer.

The PIU's E&S will be assisted by the E&S and H&S specialists of the CSC in overseeing the development of ESMPs. The cost for EIA (local standards) and ESMP will be financed by the project. PIU is responsible for overall environmental and social compliance with AIIB ESF (2019, 2022).

Contractors will be responsible for implementing mitigation measures. Site-specific Environmental and Social Management plans (SSESMPs) will be developed by the Contractors under the guidance of the CSC, and be endorsed by CSC before submission to PIU for approval. During construction, the Contractors will retain their expertise of a full-time and qualified Environmental Engineer,a full- time Environmental and Social Officer (ESO) and H&S specialist to implement and continually update the SSESMPs, and to report on the implementation of mitigation measures throughout the contract period.

The PIU will prepare and submit semi-annual reports to AIIB.

Project Category. The Project is proposed to be supported by the Asian Infrastructure Investment Bank (AIIB, or the Bank). The Project has been proposed Category "B" in accordance with AIIB's Environmental and Social Policy due to the limited number of potentially adverse environmental and social (ES) impacts, which will be limited to the Project area and can be managed using conventional ES risk management.. The Project applies of Environmental and Social Standard (ESS) 1 – Environmental and Social Assessment and Management and ESS 2 – Involuntary Resettlement (which includes land acquisition).

The national Law "On Environmental Expertise" and RCM # 541 require preparation of the environmental assessment report for all type of activities which may have environmental impact. This project was classified as the Category III (low risk) - (Roads and bridges of regional and urban significance, with the exception of the city of Tashkent.). Therefore, national EIA will be required prior commissioning of the construction works. Preliminary Environmental Impact Statements (PEIS, environmental assessment document required for Category III projects or (PZVOS) will be prepared by PIU at AYA (with support of a national company) and submitted to the MEEPCC situated in RK and Khorezm region. Environmental Appraisals (Environmental Permission) is expected to be obtained by the end of 2024. AYA PIU will ensure that Environmental Appraisal is obtained before start of civil works.

Proposed safeguard instruments. AS the project is classified as Category B for all sub-project screening and due-diligence procedure will apply. After screening local EIA and ESMPs will be developed. ESMPF includes screening procedure, guidance on development of ESMPs. Hence, the project adopts a framework approach and the corresponding instruments are: ESMPF and RPF.

Project Area of Influence. According to the AIIB Environmental and Social Framework (ESF), an area of influence (AoI) includes the territory likely to be affected by the project components including permanent and temporary facilities, its ancillary aspects, and unplanned developments. The Project AoI on this stage will be the

twenty-two project districts. In Karakalpakstan Republic in the Kanlykul, Kegeyli, Takhtakupyr, Shumanai, Daukhara Dfh-Borshetov, Amurdarya, Beruniy, Nukus, Karauzak, Kungrad, Muynak districts and Bagat, Gurlan,Koshkupir, Urgench,, Khiva, Khazarasp, Shavat, Yangiarik, Yangibazar districts in Khorezm region , therefore the number of project stakeholders is large and includes all project impacted settlements and organizations located in the above mentioned project districts.

The scope of the ESMPF. The ESMPF will guide the ESMPs process and covers the following: rules and procedures for environmental and social screening of subprojects; guidance for conducting subprojects' ESMPs; mitigation measures for possible impacts of different proposed activities and types of subprojects to be supported by the project; requirements for monitoring and supervision of implementing of ESMPs, implementation arrangements. The ESMPF has also an overview of the capacity of the PIU and local involved institutions for E&S risk management. Based on this review, the ESMPF specifies capacity building activities that would includeall these parties as well as activities on strengthening the capacity of participating local institutions on mitigating potential environmental and social risks and conducting subproject-level ESMPs.

Stakeholder Engagement Plan. The Project is responsible for ensuring that relevant processes are in place for stakeholder engagement in accordance with AIIB requirements. This is an ongoing obligation to ensure that the Stakeholder Engagement Plan (SEP) remains relevant throughout the lifetime of the Project. The SEP will act as a live document, requiring updates as Project circumstances or stakeholderdynamics evolve. The SEP is designed to ensure that Project Company identifies all stakeholders and establishes an effective engagement strategy during the development and life of the Project. The goal of this SEP is to build meaningful and trusting relationships with the local community and other interested stakeholders based on a transparent and timely supply of information and open dialogue.The following list of key stakeholders have been identified:

Table 1 Stakeholders List

Stakeholder Groups	**Direct/Indirect**	**Description of the Stakeholder**
Project affected stakeholders		
Local Communities in the Project area	Direct	The local communities are expected to directly benefits from the project through improvements to the local roads, facilities, road safety, access to material and social resources. Local community residents are potential source as workforce for implementation of the project activities. Local communities within the project influence area to be affected by construction and reconstruction works and activities of the project. The activities associated with the project will directly influence the daily lives of the impacted residents.
Local companies and organizations ıthe Project area	Direct	These include private businesses interested in improving the condition of roads and structures, farms that can use reconstructed roads to transport goods and workers, enterprises that can improve logistics by reducing transport costs and time spent on transportation or open new businesses (for example, trucking, public transport, taxis).
Makhalla Leaders	Direct	This stakeholder is an institution holding traditional power. It is headed by a chief/ chairman and play an important role in Uzbek community.

Schools	Direct	Most schoolchildren walk along the roads to the schools and will be impacted by the project.
Organizations and/or individuals whose assets may be impacted in connection with project activities	Direct	These include organizations (private farms, other entities) or individuals whose assets might be impacted due to project activities (both formal and informal owners).
Other Interested stakeholders		
Road Committee (RC)	Direct	Acts as the Executing Agency (EA) responsible for overall project coordination with government agencies and high-level decision-making authorities.
Avtoyulinvest" Agency (AYA)	Direct	Acts as the Implementing agency and is responsible for the implementation of the project, including the execution of works and overall management.
Main Road Department of the Republic of Karakalpakstan and Khorezm Region,	Direct	Subordinate organization of RC, the owners of the project andresponsible for project implementation, and local roads exploitation after project completion.
Local Government Organizations: ▪ Cabinet of Ministries ofKarakalpakstan Republic; ▪ Khokimiat of Khorezm region, ▪ Ministry of Foreign and TradeAffairs; ▪ Ministry of Transport of the Republic of Uzbekistan; ▪ The Agency for Strategic Reforms. ▪ Project District Khokimiats; ▪ Project DistrictLand CadastreOffices; ▪ Project District branches of the Ministry of Ecology, Environmental Protection and Climate Change(MEEPCC); ▪ Sanitary-Epidemiological Peace andPublic Health Service of Karakalpakstan, Khorezm Region and district branches; ▪ Karakalpakstan Ministry ofEmployment and Labour Relations. ▪ Ministry ofEmployment and Labour Relations of Uzbekistan	Indirect Indirect Indirect Indirect Indirect Direct Direct Direct Indirect Direct Indirect Indirect	▪ Interested in developing of socio-economic situation in theregion; ▪ Interested in business development in the region; ▪ Approvals for and assistance in Project activities within each of the authorities' remit (land issues, road conditions, energy, investmentsupport, etc.) ▪ Potential assistance in interaction with other authorities and localpopulation/organizations ▪ Assistance in monitoring of appliance with local labor andsanitary regulations.
Local and regional Construction Companies	Direct	Construction Companies interested to participate in the bidding forproject implementation

Workforce	Direct	Project employees, contractors, and their workers engaged in the project construction activities.
International Lenders/ International Organizations: AIIB	Indirect	Lenders are interested in the successful implementation of the projectwhile applying environmental and social requirements.
Regional and Local CSOs/NGOs (**Women**'s **Committee, Association** of **Business Women** of **Uzbekistan, Center** for **Youth Initiatives and etc.**)	Indirect	Interested in monitoring the impact of the project, monitoring theapplication with E&S requirements.
Media	Indirect	This refers to news and information media which could influencepublic opinion.
Vulnerable/Disadvantage Groups or Persons		
Unemployed people in project area. Women headed families, families with many children (more than 5), Low-income families, disabled persons, elderly people with nobody to care etc.	Direct	Groups or Individuals who may be disproportionately impacted or further disadvantaged by the project(s) as compared with any other groups due to their vulnerable status, and that may require special engagement efforts to ensure their equal representation in the consultation and decision-making process associated with the project.

The PIU will set up a project-level **Grievance Redress Mechanism (GRM)** following the policy requirements of AIIB1 and laws of the RUz2. The GRM shall respond to the inquires and resolve appeals and complaints of people who believe they have been or are likely to be adversely affected by social and environmental impacts of the project activities, and/or have complaints about the project's information disclosure and public consultation process.

The project-level GRM shall respond to the inquiries and resolve appeals and complaints of people in prompt, impartial and mutual consensus manner at the project level. This will help to response to the issues of citizens, to track a problem and avoid potential escalation of project affected people's complaints, and risks for delay and complaint related to the costs in the project implementation.

The appeals/complaints eligibility for handling through the project-level GRM shall meet the following criteria: (i) issues related to the project's social, involuntary resettlement and environmental impacts and performance outcomes, and (ii) issues, related to the project's information disclosure and public consultations process. Appeals/complaints, related to crime, fraud, and corruption issues, will be registered in the grievance logbook, however they are not eligible for handling under the project-level GRM and shall be handled as defined by laws of the RUz and relevant policies

1 https://www.aiib.org/en/policies-strategies/_download/environment-framework/AIIB-Environmental-and-Social-Framework_ESF-November-2022-final.pdf

2 The Law of the RUz "On Appeals of individuals and legal entities" No. LRU-378 dated December 3, 2014 (No. LRU-445as amended from 09 November 2017)

of the AIIB.

The project-level GRM does not override the complainants' rights to demand grievance redress as defined by national legislation. The complainant at one's discretion may choose to seek the complaint consideration through the judicial system of the RUz at any time of the grievance redress process provided hereby.

Subcomponent 3.1 of the project ToR included Development of Digital Geospatial Platform. The objective of this subcomponent is to create a sophisticated, web-based GIS platform that serves multiple purposes as well as a streamline grievance registration and monitoring, allowing the Project Implementation Unit, supervision consultants, and the Committee for Roads to manage incoming complaints, generate alerts, and track responses in real-time.

The AYA will be responsible for effective operation of the project- level GRM will establish a data base of all received grievances and ensure monitoring of its consideration, analysis and reporting in the project implementation, social and environmental safeguards reports. Other stakeholders of the project, as the Main Road Department of the Republic of Karakalpakstan and Khorezm Region, contractor(s), CSCshall take an active part in resolving grievances and appeals.

Contractor(s), CSC, and project district road authorities shall register and report each case of grievance they received from complainants, to the PIU under the AYA, who will have a general database of all grievances and monitoring their status, as described in below sub-sections.

A two-tier project-level GRM will be established during the project preparation phase. **Tier-1: Local Grievance Redress Committee.** The Tier 1 Grievance Redress Committee (GRC) will comprise of: (Supervision engineer (with E&S staff in charge), Representative of the contractors (member), Head of the makhalla foundation (member), Representative of district Khokimiat, Representative of district Road Service organization as a GFP for the subject district.

Tier-2: Second Level Grievance Redress Committee. The Tier-2 includes the GRC at the PIU central level at AYA that will formed by the end 2024 and include the followings: Project Coordinator, PIU, Chairperson; Social and environmental specialist, PIU, member; Chief specialist of Karakalpakstan and Khorezm Region Government department, member; Head of the department for the coordination of works on land acquisition and compensation of the Karakalpakstan and Khorezm Region, member; Staff of the information service of Main Road Department of the Republic of Karakalpakstan and Khorezm Region.

Resettlement Planning Framework

The RPF provides guidance to the project stakeholders where the Project requires the use of land on a temporary or permanent basis and the acquisition of land. The key objective of the RPF is to establish resettlement principles, organizational arrangements, funding mechanisms, eligible criteria, entitlements matrix, feedback, and a GRM, and monitoring and evaluation process for the PAPs who may be identified during the project implementation.

The RPF also establishes a framework for assessing concerns of the PAPs who may be subject to loss of livelihoods, assets, and well-being because of the Project. The AIIB's ESP (ESS2) is triggered when the Project would result in people losing land, other assets, or access to productive resources, which may disrupt or cause loss of livelihood (i.e., property and assets), well-being, and other entitlements. In this case, the RPF provides decision-makers with guidelines and processes for ensuring that

PAPs will improve their livelihoods and well-being or, at least, restore them to levels prevailing at Project commencement.

All reconstruction activities will occur within the existing right-of-way, eliminating the need for land acquisition and resettlement.

The following non-negotiable resettlement principles will be followed for all the subprojects implemented under this Project:

- All subprojects (detailed designs) will be screened for social impacts (involuntary resettlement impacts and risks) with the preparation of Social Due Diligence Reports, further, based on the results of the screening, it will be pleasant to decide on the need to prepare a Land Acquisition and Resettlement Plan (LARP) or a Livelihood Restoration Plan (LRP) or a Resettlement Plan (RP), as appropriate.
- No civil works will be initiated unless compensation for land and assets and reconstruction and resettlement assistance (if needed) is provided in full to all eligible PAPs.
- The Project will monitor the provision and performance of the RP/LRP through appointed Consultants.

Project Impacts. Evaluation of the project impacts has been done using an impact significance matrix, which is a combination of receptors' sensitivity and impact magnitude. Further assessment of the impact magnitude was done with consideration of duration, probability, extent, and frequency of each impact. The following impacts were assessed for each type of project activity: direct, indirect, and cumulative. For construction and operation phase climate change impacts were reviewed and generic mitigation measures were proposed.

All anticipated environmental and social impacts have been assessed at three stages – pre-construction, construction, and operation. At the pre-construction stage, it will be imperative to ensure that all necessary permissions for the project are secured and received from government agencies, and that the ESMPF is updated if any unanticipated environmental impacts become apparent, to reflect any modifications, such as changes in the project design, scope etc., if any.

Construction Period. During the construction period, the main impact will be related to the generation of wastes, increased noise level and pollutant emissions from machinery. All impacts will be short term. However, due to location of the project sites within the populated areas, these impacts will have to be mitigated and monitored.

In accordance with preliminary data received from the Feasibility study and during initial site visits, the constructed/ rehabilitated local roads both in Karakalpakstan and Khorezm region could cross different canals at several locations. Some parts of roads will be reconstructed go along the canals. Impact on water resources will not be significant. The appropriate mitigation measures for preventing pollution during the construction are specified in the ESMP.

The project sites are a combination of populated areas and agricultural lands represented by typical urban and agro- biocoenosis. The road reconstruction will be limited to existing roads only and the existing width of the roads will be maintained. New road construction and road widening is not anticipated as part of this Project. Therefore, all road works will be carried out on previously disturbed land with minimal impact on the local flora and fauna of the region. But there is anyway a possibility that some bushes and trees will also be cut.

The nearest natural protection zone to the project sites is the Low-Amudarya State

Biosphere Reserve (LABR) at a distance of more than 3 km from the project sites. The locations of critical habitats were not identified within the sub-project areas. However, if during the detailed design stage of the project the location of facilities will be changed, then supplementary biodiversity screening needs to be undertaken.

It is anticipated that during the construction phase a substantial volume of wastes will be generated. Most of them will be non-hazardous. During the reconstruction works will be removed asphalts covering roads, concrete, blocks, and old pipes. Contractor will have to develop a Waste Management Plan (WMP) in accordance with the provided template.

The project will involve the demolition of existing asbestos cement, metal, cast iron pipes and reinforced concrete links. Some of the pipes may contain asbestos that could be hazardous to human receptors. The CSC, ESO together with Contractor prior to dismantling will assess and screen places of pipes lying and pipes and in case of presence of any asbestos materials, an Asbestos-Containing Materials Management Plan (ACMMP) will be used, developed in accordance with the recommended template. Asbestos wastes will be disposed at the local municipal landfill in accordance with procedure indicated in the ACMMP.

Another noticeable impact will be related to health and safety of the communities and Contractor workers. The impacts are related to the risks of dismantling and excavation works, more intensive movement of vehicles, and hindered access to houses and commercial facilities. Since a major part of the civil works will be implemented in the densely populated areas, the implementation of all relevant measures provided in the ESMP will be crucial to avoid any negative impact.

During the construction phase, labor camps may be located within the residential areas, or suitable open spaces. To ensure proper camp operation, the Contractor will develop a Construction Camp Management Plan (CCMP) and ensure its proper implementation.

Besides impacts on air, water and quality, some other risks also relate to both community and occupational worker health and safety. Safe working conditions, together with compliance with sanitary, fire protection and other construction norms and requirements, will be strictly adhered to prevent electrical shocks and other accidents during the construction period. Each Contractor will be required to develop an Occupation Health and Safety Plan, which will cover such requirements as the usage of Personal Protective Equipment (PPE), Code of conduct, and participation in a training program.

All national regulations related to the construction works and the World Bank Group's *Environment, Health and Safety Guidelines* (EHS Guidelines3) will have to be complied with. The PIU at AYA will closely coordinate with the communities regarding the planning and implementation of project works.

Operation Phase. Some negative impacts may occur during operation phase as well. The operation and maintenance (O&M) activities at the local roads will generate wastes such as oily run-off from the road surface, spilled oil and other lubricants, broken vehicle parts such as pieces of tires, asphalt/concrete scrapping, road kills, and other similar wastes. A Waste Management Plan will be prepared a as part of the standard operating procedures. The non-hazardous waste will be disposed through the city or district services whereas hazardous wastes will be disposed by agreement

3 Environmental, Health, and Safety Guidelines (ifc.org)

with local organizations for the disposal of solid and hazardous wastes.

After the reconstruction of local roads, vehicular traffic is expected to increase, as a result of which vehicular emissions and ensuing atmospheric pollution are likely to increase along the road. Tree plantation will be carried out along the road particularly near the settlements and sensitive receptors.

During the operation phase, noise and vibration will be generated mainly from heavy trucks traffic on the local roads. The noise will have considerable impacts on communities living along the road, particularly for the sensitive receptors. The vibration is likely to affect the nearby buildings and structures. The tree plantation along the road proposed as air pollution mitigation measure can marginally address the noise generated from the vehicular traffic. Road signage for Silence Zone will be installed near the sensitive receptors.

The maintenance activities on the local roads will pose OHS risks for the maintenance staff. These risks may include exposure to physical hazards from use of heavy equipment including cranes; trip and fall hazards; exposure to dust, noise and vibrations; falling objects; exposure to hazardous materials; exposure to electrical hazards from the use of tools and machinery; and risks associated with working close to vehicular traffic. As part of the O&M procedures, an OHS plan will need to be prepared and implemented. The Plan will define procedures and protocols for each type of activities to be carried out as part of the O&M activities.

With the increase in the traffic volume and vehicular speeds, risk of traffic accidents will also increase. The project road passes through many settlements also and also some sensitive receptors. At such locations, the increased traffic volume poses additional and severe risks to pedestrian and other road users. The project road needs to meet highway safety standards including traffic signage, warning signs, traffic lights, reflectors, and pedestrian crossings (overhead or underground where possible/appropriate). Emergency services (ambulance, rescue vehicles) will also need to be arranged. In addition, liaison with the community will need to be maintained in addition to raise their awareness regarding safety risks associated with vehicular traffic.

Gender Action Plan. During the community meetings and focus group discussions conducted in September 2024, the Consultants identified several gender-related issues that have implications for the project. These included a high unemployment rate among local women, limited job opportunities, lack of public transport and lack of lighting along roads, traffic lights and pedestrian crossings.

In response to these challenges, local community leaders suggested addressing these issues by training women in the basics of entrepreneurship, marketing and financial managment, create points for roadside trade of agricultural products and food, installation of street lighting with solar panels in taxi/bus stops, construction of pedestrian sidewalks on road sections where community residents often move (schools, family clinics, markets).

The proposed GAP is designed to address the current community issues and empower local women to improve their circumstances.

ESMPF disclosure and public consultation. ESMPF and RPF preparation has been highly participatory. Extensive consultations have been held with various stakeholders including the public communities, local / district/ regional authorities, other departments and service providers. The stakeholders' expectations and the related issues/ concerns have been taken due note of while preparingthese instruments. 11 focus group discussions were held in the participating regions on September 18-24,

2024. Based on suggestions received during the consultation, the ESMPF and RPF documents have been prepared and they will be published on the Karakalpak website and will be published on the external AIIB website.

INTRODUCTION

1. The Government of the RUz is preparing to receive a proposed investment loan from the AIIB to finance the Rehabilitation of the Local Roads Network in Karakalpakstan and Khorezm Project.

2. Uzbekistan is strategically located in the heart of Central Asia, bordering Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan and Turkmenistan. The country has a markedly arid climate, with rainfall averaging only 8 inches (200 mm) annually. Most of the population is concentrated in the fertile Fergana Valley and the southern provinces that have been important trade settlements since antiquity.

3. Uzbekistan's road network is categorized into public roads, streets in cities and settlements, and inter-farm rural roads. Public roads are further classified into international, state, and local roads, while streets and inter-farm roads form part of the internal road system. The scope of the current Project focuses solely on local roads.

4. The public road network in Uzbekistan covers approximately 184,562 km, which includes international, state, and local roads. Local roads, vital for rural connectivity, span about 24,589 km and are managed by the Committee for Roads (RC) under the Ministry of Transport (MOT). Local roads play a crucial role in connecting rural areas to healthcare, education, and employment, but many remain in poor condition, limiting access and development in rural communities.

5. Public roads in Uzbekistan are classified into five categories based on technical standards and traffic capacity. Category I include expressways and highways with four or more lanes, while Category II consists of two-lane international and state roads. Local roads, which primarily serve rural areas with traffic volumes below 2,000 passenger car units (PIU), make up a significant portion of the network. Of these, 93% are paved, with the remaining 7% having a gravel surface. The majority of local roads (57%) fall under Category IV, 16% are Category III or higher and 28% is classified as the lowest Category V. Despite this extensive network, 31% of local roads require capital repairs to maintain functionality.

6. The RoK, occupying an area of more than 165.0 thousand km2, covers the entire north-western tip of Uzbekistan. With the total population being 2,002,700 people as of Q1 2024, the population density of the province is 12.10 people per square kilometre. Its dispersed population is around 1.8 million and its main economic drivers are agriculture, natural gas and minerals. The natural environment of the RoK is primarily an arid desert consisting of rare, barren lands subject to severe drought.

7. Khorezm Region is located in western Uzbekistan and borders the Republic of Karakalpakstan in the north and west, with Turkmenistan in the south and with Uzbekistan's Bukhara Province in the east. The province area is 6,300 km². With the total population being 1,995,600 people as of Q1 2024, the population density of the province is 329 people per square kilometer.

8. Two regions, in particular, face acute socioeconomic challenges: Republic of Karakalpakstan suffers from environmental degradation, high poverty rates, and limited access to essential services such as healthcare and education. Similarly, Khorezm faces issues like water scarcity and soil salinity, which hinder agricultural productivity and exacerbate poverty. Both regions exhibit per capita GDP figures significantly below the national average, with Karakalpakstan at approximately USD1,310 and Khorezm at USD1,480, compared to the national average of USD2,275. These disparities highlight the economic challenges faced by these regions in comparison to more prosperous parts of Uzbekistan.

9. More than 30% of rural roads in Karakalpakstan and Khorezm require major repairs to ensure safety for residents. In Khorezm, the Consultant observed that road conditions are so poor that vehicles struggle to travel faster than 20 km/h. Approximately 140,000 people in Karakalpakstan and 191,091 people in Khorezm rely on these roads to access essential services. Vulnerable groups, including women and children, are disproportionately affected, often relying on unsafe alternative travel options such as motorcycles.

10. Planned activities under the proposed AIIB-financed Project include reconstruction of 516 km of Category III and Category IV local roads in the Republic of Karakalpakstan and in the Khorezm Region (encompassing 23 road sections spanning 328 km across 11 districts) and in the Khorezm Region (16 road sections covering 188 km across 9 districts). The proposed reconstruction works include climate resilient pavement reconstruction, bridge repair and construction, drainage enhancements, the installation of road safety measures such as additional signs, barriers, and pedestrian crossings, and the provision of bus stops. Where necessary, sidewalks will be added to enhance pedestrian safety.

11. The selected local roads primarily feature asphalt pavement, with widths ranging from 5 to 9 meters and unpaved shoulders varying from 1 to 2 meters. Many of these roads suffer from poor to very deteriorated conditions, with issues such as potholes, alligator cracking, and depressions. Essential road safety features such as sidewalks and guardrails are often lacking, and surface drainage may be insufficient or in disrepair.

12. Reconstruction works will encompass pavement removal and replacement of asphalt and base layers, bridge repair and construction, drainage enhancements, installation of road safety and climate resilient measures and bus stops. Sidewalks will be added, particularly around schools, to enhance pedestrian safety. All rehabilitation activities will occur within the existing right-of-way, eliminating the need for land acquisition and resettlement. Detailed design for this local road rehabilitation Project is currently in progress.

13. According to RC, 20% of the rural settlements and 25% of the rural population are connected directly by international and state roads. A further 46% of rural settlements and 51% of the rural population are connected by local roads, while the remaining 33% of rural settlements and 24% of the rural population are connected by inter-farm rural roads. This means that 80% of the rural population, or 13.1 million people, living in 8,797 rural settlements are dependent on local and inter-farm rural roads for their access to health facilities, education, markets, administrative services, employment, etc.

14. The lack of enhancements to local road infrastructure hampers the rural population’s ability to capitalize on the advantages of improved trunk roads. This situation significantly impacts rural dwellers, leading to physical isolation during certain times of the year and hindering access to markets, schools, healthcare services, and district centers. Particularly vulnerable groups, such as women and children, are disproportionately affected, as they must seek alternative travel options and spend more time fulfilling domestic responsibilities and errands while traveling longer distances to access vital social and economic services.

15. The Project is expected to result in the improvement of the local road network of the Republic of Karakalpakstan and Khorezm from several perspectives, including connectivity, safety, sustainability, climate resilience and technology.

16.Farmers stand to gain substantially from the Project, as improved road connectivity will provide them with better access to regional, national, and international markets. Strengthened logistics infrastructure will facilitate the transportation of agricultural products, opening up new economic opportunities for farmers and boosting agricultural trade and commerce in the region.

17.Women and youth, who often bear the brunt of limited access to essential services due to poor road infrastructure, are expected to benefit significantly from the Project. By improving road connectivity and accessibility, the Project will enable women and youth to access healthcare, education, and economic facilities more easily, empowering them to participate more fully in social and economic activities.

18. The Project consists of the following Components:

Component 1. Reconstruction of the Local Roads in Karakalpakstan and Khorezm. This component focuses on the reconstruction of local roads in the Republic of Karakalpakstan and the Khorezm region. The reconstruction works include pavement reconstruction, bridge repair and construction, drainage improvements, and the installation of road safety measures such as signs, barriers, pedestrian crossings, and bus stops. Where necessary, sidewalks will be added to improve pedestrian safety.

Climate resilience measures, such as the use of durable pavement materials and enhanced drainage systems to cope with higher temperatures and seasonal flooding, will be integrated. No capacity expansion is planned, and road reconstruction will remain within the existing corridors.

The Project also includes two years of road maintenance to ensure sustainability and aligns with the Government's strategy to involve the public sector in road maintenance. Timely maintenance will help mitigate damage from extreme weather due to climate change, enhancing the climate resiliency of the roads.

Additionally, the component will fund the hiring of a Construction Supervision Consultant to oversee the entire construction process, including the review of climate-resilient measures to ensure proper adaptation and mitigation efforts are in place, as well as the Road Safety Audit (RSA) in overseeing compliance with contractual obligations and ensuring quality and safety standards. There are three sub-components:

- *Sub-component 1.1.* Reconstruction Works of the Local Road Network in the Republic of Karakalpakstan
- *Sub-component 1.2.* Reconstruction Works of the Local Road Network in Khorezm Region
- *Sub-component 1.3.* Construction Supervision Consultancy

Component 2. Institutional Strengthening and Capacity Building. This component will support RC's efforts to operationalize the PIU to ensure the quality implementation of the Project. This component will also support institutional strengthening and capacity building for PIU, financial audit and other operational costs of the PIU.

Component 3. Development of Digital Geospatial Platform and Women and Youth Empowerment Program. There are two sub-components:

- *Sub-component 3.1.* Development of Digital Geospatial Platform
  The objective of this sub-component is to create a sophisticated, web-based Geographic Information System (GIS) platform that serves multiple purposes:
  Provide an interactive, online tool for construction supervision, enabling real-time monitoring of project implementation, and generating progress and financial reports with visualizations.
  Support the evaluation of social and economic benefits derived from improved connectivity, including enhanced access to healthcare, education, and tourism facilities, and the increase in public facilities accessible to the community.
  Visualize climate vulnerability and risks affecting each road section to be

rehabilitated, while tracking the implementation of climate resilience measures. Streamline grievance registration and monitoring, allowing PIU, supervision consultants, and RC to manage incoming complaints, generate alerts, and track responses in real-time.

- *Sub-component 3.2*. Women and Youth Empowerment Program
  This sub-component focuses on fostering social and economic inclusion, particularly for women and youth, by leveraging the Project's interventions. Key activities to be implemented by the PIU include:
  Conducting a scoping study and skills needs assessment to identify potential business and livelihood opportunities for women in the surrounding areas.
  Developing a women's entrepreneurship program based on the needs assessment, along with participant selection criteria and a list of potential participants.
  Identifying potential sources of grant financing for women entrepreneurs.
  Providing training on climate resilience and road maintenance, targeting residents in Project-affected areas, with a special focus on women and youth.
  Organizing engaging road safety awareness programs for young people, incorporating educational materials and campaigns on traffic rules and pedestrian safety.

19. The Project is slated for a three-year construction period, spanning from 2025 to 2027, followed by a two-year maintenance after operation.

REGULATORY REVIEW

National Environmental Requirements

National Institutional Framework

20. In accordance with UP-81 "On measures to transform the sphere of ecology and environmental protection and organize the activities of the authorized state body" dated May 31, 2023, the Ministry ofNatural Resources (until 2023 - State Committee for Ecology) was renamed to the MEEPCC.

21.The MEEPCC of the RUz is the primary environmental regulator. The MinEcology reports directlyto the Parliament and is responsible at national, regional (oblast) and local (rayon) levels for the development and enforcement of the national environmental and conservation policy, environmental compliance, integrated environmental management across various sectors, and securing healthy environment conditions across the country.

22.According to its structure, the MEEPCC has a central body in Tashkent, and regional branches andagencies providing research and technical support. Regional environmental authorities are structured similarly to the MinEcologiya.

23.From July 1, 2023, the *"Public Environmental Controller" system* is being introduced in the RUz, in accordance with which the rights and obligations of controllers are defined as follows:

- Identification of environmental violations, execution and introduction of the relevant act intothe Environmental Control Platform;
- Obtaining free education and advanced training in order to acquire special knowledge and skillsin the implementation of activities;
- Obtaining information about the measures taken in relation to the identified offenses,participation in the processes related to the sentencing of the offender;
- Receiving remuneration for effective activity in the manner and in the amount established bylaw.

24.Public environmental controllers are required to ensure transparency, counteract corruption, as wellas objectively prepare reliable data in the process of identifying and reporting offences.

25.The other state agencies involved directly or indirectly in the regulation and protection of the environment are:

26. **Ministry of Transport of the RUz**[5] is the authorized state body for:

(i) development of a unified state transport policy aimed at the harmonious development of all types of transport on the basis of their integration into a single transport network and the use of new efficient transport and logistics systems;

(ii) implementation of a unified tariff policy in the field of transport, aimed at stimulating the development of the transport and logistics services market, ensuring their availability for all categories of consumers, as well as attracting investment in the industry;

(iii) development of proposals and implementation of measures for the development of international transport corridors, improvement of the logistics system, efficient use of the country's transport potential, minimization of costs of business entities on transport and logistics services;

(iv) development of public-private partnerships and increasing the investment attractiveness of the country in the field of transport and road facilities;

(v) introduction of advanced information technologies for digitalization of the entire transport system, development and implementation of strategies for the prospective development of the Unified Interconnected Transport System of the Republic of Uzbekistan;

(vi) pursuing a unified technical policy in the field of roads, providing a comprehensive solution to the financing, design, construction, repair and operation of roads, airfields and airports, railway stations, and other transport infrastructure, taking into account the interests of users;

(vii) control in the field of transport, organization and conduct of investigations of aircraft accidents and incidents with civilian and experimental aircraft, as well as accidents and wrecks in railway and river transport;

27. The Minister of Transport of the RoK is appointed and dismissed from office by the Jokargy Kenes of the RoK in agreement with the Minister of Transport of the RUz.

28. The **Road Committee** under the Ministry of Transport of the RUz is the authorized state body for:

(i) maintaining and developing a network of public roads in good condition, increasing their capacity, improving the quality of services provided to road users, as well as coordinating the development of roads and roadside service facilities;

(ii) development and implementation of projects in the field of road construction with the participation of international financial institutions and foreign state financial organizations, as well as with the involvement of donor funds;

(iii) attracting investments into the network, primarily foreign direct investment, and the introduction of alternative sources of financing, including public-private partnership mechanisms, for the design, construction, reconstruction and repair of public roads along the span;

(iv) improvement of network management through the introduction of modern management systems, advanced foreign experience and innovative forms and methods of labor organization in accordance with international standards;

(v) ensuring compliance with regulatory documents and requirements in the field of technical regulation in the field of road construction, road construction materials, products and structures;

(vi) organization of rational and efficient use of land plots in designated areas of public roads;

(vii) implementation of modern digital automated traffic management systems.

29. **Ministry of Health**. This ministry develops and approves sanitary regulations, rules, and hygienicstandards, and carries out state sanitary supervision over their observance as well as methodological supervision of the work of sanitary and epidemiological services, regardless of their departmental subordination.

30. State sanitary supervision is carried out by the **Service for Sanitary and Epidemiological Welfare and Public Health of the RUz** under the Sanitary and Epidemiological Welfare and Public Health Committee of the RUz, the departments of sanitary and epidemiological welfare and public health of the RoK, regions and the city of Tashkent, district (city) departments of sanitary and epidemiological welfare and public health.

National Environmental Legislation

15. The Constitution of RUz (2023), under its nature protection and management framework, definesthe rights and responsibilities of its citizens to include the following:

(i) Everyone has the right to a favorable environment, reliable information about its condition.

The government creates conditions for the implementation of public control in the field of urbanplanning in order to ensure the environmental rights of citizens and prevent harmful effects onthe environment.

Draft urban planning documents are subject to public discussion in the manner prescribed by law.

The state, in accordance with the principle of sustainable development, implements measures to improve, restore and protect the environment, maintain ecological balance (Article 49);

(ii) Citizens are obliged to take care of the natural environment. (Article 62);

(iii) The land, its subsoil, water, flora and fauna and other natural resources are national wealth, aresubject to rational use and are protected by the state;

(iv) Land may be privately owned on the terms and in the manner prescribed by law and ensuring its rational use and protection as a national wealth. (Article 68).

16. Uzbekistan has enacted the following natural resources and media-specific environmental management laws:

17. **Law "On Nature Protection"** (1992, amended in 2021) states legal, economic, and organizationalfoundations for the conservation of the environment and rational use of natural resources. Its purpose is to ensure balanced relations between humans and nature to protect the environmental system and to guarantee the rights of the population to live in a safe environment. Article 25 of the law states that the SEE is a mandatory measure for environmental protection, preceded to a decision-making process. In addition, Article 25 says that the implementation of a project without Positive Conclusions on the SEEis prohibited.

18. **Law "On Ambient Air Protection"** (1996, amended in 2006). This law specifies regulations on air protection and its objectives. It also includes standards, quality and negative impact, norms, and requirements on fuels and lubricants, the production and operation of vehicles and other machinery andequipment, ozone layer protection requirements, the obligations of enterprises, institutions and organizations toward air protection, and compensations for damages from air pollution.

19. **Law "On Water and Water Use"** (1993 the latest amended in 2021). This law regulates water relations, and efficient water use by the population and economy. The law regulates the protection of water from pollution and depletion, prevention, and elimination of harmful impacts on water, the improvement of water bodies, and the protection of the rights of enterprises and institutions, organizations and dehkan farms and individuals in the field of water relations.

20. **Law "On Wastes"** (2002, amended in 2011). This law addresses waste management, exclusive ofemissions and air and water pollution, and confers authority to the MEEPCC concerning inspections, coordination, and environmental expertise. It also establishes certain parameters regarding locations forwaste disposal. The key objective of this law is to prevent negative effects of solid wastes

on people's lives and health, as well as on the environment, reduce waste generation, and encourage rational use ofwaste reduction methods in household activities.

21. **Law "On Environmental Audit"** (2021). This law was adopted to regulate environmental auditsin the field of environmental protection and rational use of natural resources, including voluntary or mandatory environmental audits. The law states that 'an environmental audit can be carried out on a voluntary form by businesses with low or insignificant (local) risk of environmental impact and on a mandatory form on an annual basis for businesses with high and medium risk of environmental impact.'

22. **Law "On Environmental Control"** (2013, amended 2021). This law provides the approach regarding: (i) prevention, detection and suppression of violation of the requirements of legislation in the field of environmental protection and rational use of natural resources; (ii) monitoring the state of the environment, identifying situations that can lead to environmental pollution, poor use of natural resources, and create a threat to life and health of citizens; (iii) determination of compliance with the environmental requirements of planned or ongoing economic and other activities; and (iv) ensuring compliance with the rights and legitimate interests of legal entities and individuals, performing their duties in the field of environmental protection and rational use of natural resources.

23. **Law "Drinking Water Supply and Wastewater Disposal"** (2022). The purpose of this Law is to regulate relations in the field of drinking water supply and wastewater disposal.

24. **Law "On the Sanitary and Epidemiological Welfare of the Population"** (2015, amended 2022).This law regulates relations in the field of sanitary and epidemiological welfare of the population.

25. **Law "On Protection of Flora"** (1997, amended in 2016). This law regulates relations in the fieldof protection and use of the plant world growing in natural conditions, as well as wild plants containedin the conditions of culture for their reproduction and conservation of genetic resources.

26. **Law "On Protection and Use of the Wildlife"** (new edition - 2016). This law regulates relationsin the field of protection, use, restoration and reproduction of wildlife in order to ensure the conditionsof its existence, conservation of species diversity, integrity of natural communities and habitat.

27. **Land Code of the RUz** (1998). The Land Code aims to regulate land relations to ensure that present and future generations have evidence-based sustainable use and conservation of land and improvements of soil fertility, conservation and improvement of the environment and conditions for equitable development of all forms of management, protection of individuals and legal entities' rights for land, as well as strengthening the rule of law in this area.

28. **The Red Data Book of Uzbekistan (UZRDB)** is the main document containing aggregate information on the state of rare, population decreasing, and endangered species of plants and animals in the territory of Uzbekistan. The first edition of the Red Data Book of the RUz (1984) included 163 species of plants; the second edition (1998), 301 species; the third edition (2006), 302 species of higherplants and three fungi species; the fourth edition (2009), 321 species of higher plants and three fungi species. The first edition of the UZRDB (1983) included 63 species; the second edition (2003), 184; thethird edition (2006), 184; the fourth edition (2009), 184 animal species and subspecies. In the last 10- 15 years, according to the International Union for the Conservation of Nature (IUCN), the threat of extinction of species in the

wild has grown for a number of species and subspecies, which is connectedwith the reduction of their habitats and decline in population size. This primarily concerns hoofed mammals as the most vulnerable and susceptible to anthropogenic influences of components of fauna. The latest version of the UZRDB was released in 2019 and included 202 species of fauna, and 314 species of flora, however it is understood it has not been completed in conjunction with the IUCN.

29. **Other regulations and standards** applicable for the Project are:

(i) Decree of the President of the RUz #5863 “On Approval of Concept of Environmental Protection of the RUz till 2030”;

(ii) Decree of the Cabinet of Ministers of the RUz #343 “On further improvement of the environmental pollution assessment system” (2021);

(iii) Decree of the President of the RUz #UP-151 “On measures for the effective organizationof public administration in the field of construction and housing and communal serviceswithin the framework of administrative reforms” (2023);

(iv) Decree of the President of the RUz #5883 “On measures to improve water resources management in the RUz to increase the level of population security with portable water and to improve its quality” (2019);

(v) Decree of the Cabinet of Ministers of the RUz #11 “On additional measures to improveenvironmental activities in the municipal service system” (2010, amended in 2019);

(vi) Decree of the Cabinet of Ministers of the RUz #981 “On approval of the regulations on the order of establishment of water protection zones and sanitary protection zones of water bodies in the territory of the RUz” (2019);

(vii) Decree of Cabinet Ministries of RUz #255 “On approval of some administrative regulations for rendering public services in the sphere of nature use” (2018);

(viii) Decree of the Cabinet of Ministers of RUz #14 “On approval of the regulations on the procedure for developing and approving draft environmental standards” (2014, amendedin 2022);

(ix) Decree of the President of the RUz #UP-165 “On approval of the strategy of innovativedevelopment of the RUz for 2022-2026” (2022, amended in 2023);

(x) Law on Protection and Use of Archaeological Heritage (2009);

(xi) Law of the RUz #ZRU-537 “On public-private partnership” (2019, amended in 2022);

(xii) SanR&N No 0297-11 - Sanitary Rules and Regulations on cleaning the territories ofpopulated areas from solid household waste in the conditions of the RUz;

(xiii) SanR&N No 0158-04 - Collection, transportation and disposal of asbestos containedmaterials in condition of Uzbekistan;

(xiv) SanR&N No 0350-17 - Sanitary rules and norms for the protection of atmospheric air inplaces of the RUz;

(xv) SanR&N No 0339-16 - Sanitary rules and norms for planning and development ofpopulated areas of Uzbekistan;

(xvi) SanR&N No 0127-02 - Sanitary rules for inventory, classification, storage and disposalof industrial wastes;

(xvii) SanR&N No 0022-22 - Sanitation rules hygiene requirements for the organization ofconstruction production and construction work;

(xviii) SanR&N No 0318-15 - Hygienic and anti-epidemic requirements for the protection ofwater in reservoirs on the territory of the RUz;

(xix) SanR&N No.0267-09 - Sanitary norms and rules for ensuring permissible noise in the premises of residential, public buildings and on the territory of residential buildings;

(xx) SanR&N No 0255-08 - Main criteria for hygienic assessment of the water bodies contamination for assessing health risks for population in Uzbekistan;

(xxi) SanR&N No 0202-06 - The procedure for issuing permits for special water use, development and approval of projects of maximum permissible discharges (MPD) of substances entering with wastewater into water bodies and on the terrain;

(xxii) SanR&N No 0293-11 - Hygienic standards list of maximum permissible concentrations(MPC) of pollutants in the atmospheric air of populated areas on the territory of the RUz;

(xxiii) SanR&N No 0212-06 - Hygienic assessment of the degree of soil pollution of differenttypes of land use under specific conditions of Uzbekistan;

(xxiv) SanR&N No 0183-05 - Hygienic requirements for the quality of the soil in settlementsareas in specific natural and climatic conditions of Uzbekistan;

(xxv) SHNK 3.06.03-08 - Highways;

(xxvi) SHNK 2.10.09-10 “Norms of land allocation for highways".

(xxvii) KMK 3.01.02-00 - Construction safety;

(xxviii) O’z DSt 33062-2014 -Interstate standard "Public roads"

(xxix) O’z DSt 951:2011 - Sources of centralized drinking water supply. Hygienic, technicalrequirements and selection rules;

(xxx) O’z DSt 950:2011 - Drinking water. Hygienic requirements and quality control;

(xxxi) O’z DSt 1057:2004 - Vehicles. Safety requirements for technical conditions;

(xxxii) CR&N No 2.01.08-96 – Noise protection;

(xxxiii) CR&N No 3.01.02-00 - Construction Safety Standards.

National Environmental Impact Assessment

31. The national environmental assessment procedure is regulated by the law "On State Environmental Expertise" (SEE) and the regulation “On further improvement of the environmental impact assessment mechanism”, approved by Resolution of the Cabinet of Ministers No. 541 (2020, last amended 30.04.2022). The resolution specifies the legal requirements for environmental assessment documents in Uzbekistan. According to the Law, SEE is a type of environmental examination carried out by specialized expert bodies to (i) ensure compliance of the planned activities with environmental requirements. and (ii) determine permissibility of project implementation.

32. The MEEPCC is the authorized state body in the field of the SEE. The Center of State Environmental Examination (CSEE) under the MEEPCC carries out the SEE for projects classified under Categories I and II to assess their environmental impact (high and medium risk).

33. The CSEE in the regions and in the RoK carries out the SEE for projects classified as Category III and IV (low risk and local risk) to assess their environmental impacts.

34. The regulation sets out a procedure of arrangement and carrying out the SEE (Annex 2 to RCM). The environmental assessment stages and their required results are summarized as follows:

(i) **Stage I**: A PEIS shall be prepared during preparation of a proposed project prior to any fund allocation for development.

(ii) **Stage II**: An Environmental Impact Statement (EIS) shall be carried out on a basis of a conclusion of the environmental expertise issued at the first stage of the assessment. The second stage of the assessment is also submitted to the CSEE, and the conclusion must be received before the start of construction.

(iii) **Stage III**: State Environmental Consequences (SEC) is the final stage of the SEE process and shall be carried out prior to the project start. The report will include (i) a detailed description of changes to be made to the project design as a result of the CSEE review during the first two stages of the environmental assessment process, (ii) comments received during public consultations, (iii) environmental standards applicable to the project, (iv) environmental monitoring requirements related to the project, and (v) the key opinion.

35. Types of economic activities assessed by SEE are classified as one of four categories:

(i) Categories I and II are "high and medium risks of environmental impact" (all stages of environmental assessment are required);

(ii) Category III is "low risk of impact" (all stages of environmental assessment are required); and

(iii) Category IV - "local impact" (only the first stage of environmental assessment - PEIS is required).

36. The SEE opinion is valid for three years from the date of its issuance. If a project is not implemented within three years from the date of issuing the opinion, the environmental assessment reports (PEIS or EIS) need to be revised and re-submitted to the CSEE for revision and approval.

37. The opinion of the SEE shall be shared with the relevant regional (city) Control Environmental Inspectorates for their follow up and supervision. Such Inspectorates under the MEEPCC supervise thecompliance with the requirements and terms specified in the SEE's opinion.

38. The national Law "On Environmental Expertise" and RCM # 541 require preparation of the environmental assessment report for all type of activities which may have environmental impact. This project was classified as the Category III (low risk) - (Roads and bridges of regional and urban significance, with the exception of the city of Tashkent.). Therefore, national EIA will be required prior commissioning of the construction works.

39. PEIS (environmental assessment document required for Category III projects or PZVOS4) were prepared by PIU at AIA (with support of a national company) and submitted to the MEEPCC in Karakalpakstan and Khorezm Region in 2020. The SEE opinions received in 2020 and have a validity period of 3 years. Since the validity period is over, PEIS must be updated in accordance with the changes made to the feasibility study and submitted for environment examination.

40. **Table 2** presents permissions from the national agencies needed to be received prior to commencement of civil works and prior to the project operation:

4 PZVOS is Russian translation of Preliminarily Environmental Impact Statement (PEIS) – 1st stage of national Environmental Impact Assessment Procedure

Table 2 List of required approvals and permissions

#	Name of the document	Time of receiving permission	Agency issuing permission	Responsible entity
1	Permission/license for usingexisting borrow pits or opening new ones (if any)	Prior to commencement ofthe construction works	Provincial Land Cadastre Department. MEEPCC	Contractor
2	Permission for cutting or replanting trees (in case of necessity of cutting trees which are not belonged to population and not part of RPF)	Same as above	Provincial MEEPCC	Contractor
3	Permission on water use during construction phase	Prior setting construction camps	Provincial MEEPCC	Contractor
4	Non-objection from all municipal utilities on conduction of project works	Prior construction works	"Avtoyulinvest" Agency	Contractor
5	SEE opinion for PEIS (EIS) (environmental assessment document required for Category III projects)	Prior construction works	Provincial MEEPCC	"Avtoyulinvest" Agency
6	SEE opinion for SEC (environmental assessment document required for Category III projects)	Before commissioning	Provincial MEEPCC	"Avtoyulinvest" Agency

Environment Quality Standards

Air Quality Standards

43. The following regulatory documents define standards for the main pollutants in air in the living area: **SanR&N 0293-11 "Hygienic standards. The list of MPCs of pollutants in the ambient air ofsettlements in the territory of the RUz"** (**Table 3**).

Table 3 Summary of Relevant Ambient Air Quality Standards for Protection of Human Health (mg/m3)

Air quality parameter	Maximum allowed during 30min	Maximum allowed averagedaily	Maximum allowed average monthly	Maximum allowed averageyearly
NO_2	0.085	0.06	0.15	0.04
NO	0.6	0.25	0.12	0.06
SO_2	0.5	0.2	0.1	0.05
CO	5	4	3.5	3
Dust (PM_{10})	0.15-0.5	0.1-0.35	0.08-0.2	0.05-0.15

44. The WHO standards 5for air quality are presented in **Table 4** below.

Table 4 WHO Air Quality Standards

Air Quality Parameter	**Period**	**Norm (mg/m^3)**
SO_2	24 hours	40
NO_2	1 year 24 hour	10 25
PM_{10}	1 hour 24 hours	45 15
$PM_{2.5}$	1 hour 24 hours	15 5

45. The air quality standards recommended for assessment of ambient air quality are presented in

Table 5 Ambient Air Quality Standards

Pollutant	**Average Period**	**Norm in µg/m3**	**Norm mg/m^3**	**Source of standards**
SO_2	10 min	500	0.5	EHS Guidelines
	30 min	500	0.5	Uzbekistan
	24 hours	20	0.02	EHS Guidelines/
	1 month	500	0.5	Uzbekistan
	1 year	50	0.05	Uzbekistan
NO_2	10 min	200	0.2	EHS Guidelines/ Uzbekistan
	30 min	85	0.085	Uzbekistan
	24 hours	60	0.06	Uzbekistan
	1 month	50	0.05	Uzbekistan
	1 year	40	0.04	EHS Guidelines/ Uzbekistan
NO_X	30 min	600	0.6	Uzbekistan
	24 hours	250	0.25	Uzbekistan
	1 month	120	0.12	Uzbekistan
	1 year	600	0.6	Uzbekistan
CO	30 min	5000	5.0	Uzbekistan
	24 hours	4000	4.0	Uzbekistan
	1 month	3500	3.5	Uzbekistan
	1 year	3000	3.0	Uzbekistan
PM_{10}	1 year	20	0.02	EHS Guidelines
	24 hours	50	0.05	EHS Guidelines
PM_{25}	1 year	10	0.1	EHS Guidelines
	24 hours	25	0.025	EHS Guidelines

Water Quality Standards

46. There are different standards for various type of water bodies in Uzbekistan. Depending on the purpose of use, water bodies are categorized as for domestic use

5 WHO Air Quality Guidelines for particulate matter, ozone, nitrogen dioxide and sulfur dioxide, Global Update 2005,Summary Risk Assessment.

(could be used as a source for potablewater after treatment), fisheries, municipal use, and irrigation purposes. **Table 6** and **Table 7** present the national general effluent standards into the water bodies classified by type of use.

Table 6 General Requirements for Water Quality6

<table>
<tr><th rowspan="3">Indicators</th><th colspan="4">Purpose of Water Use</th></tr>
<tr><th rowspan="2">Domestic Use</th><th rowspan="2">Recreation and Service</th><th colspan="2">Fishery Needs</th></tr>
<tr><th>Highest and First Category</th><th>Second Category</th></tr>
<tr><td>Suspended solids</td><td colspan="4">Depending on natural conditions, the content of suspended solids in wastewater discharge shall not exceed</td></tr>
<tr><td></td><td>0.25 mg/dm^3</td><td>0.75 mg/dm^3</td><td>0.25 mg/dm^3</td><td>0.75 mg/dm^3</td></tr>
<tr><td></td><td colspan="4">For reservoirs and watercourses containing at low water above 30 mg/dm^3 ofsuspended solids, there may be an increase to 5%. Discharge of suspensions with fallout rate of more than 0.4 mm/s for watercourses and more than 0.2 mm/s in water reservoirs are prohibited.</td></tr>
<tr><td>Floating matter</td><td colspan="4">There shall not be a film of oil products and concentrations of other contaminants on the water surface</td></tr>
<tr><td rowspan="2">Color</td><td colspan="2">Shall not be detected in the column of height</td><td colspan="2" rowspan="2">There shall be no adulterants</td></tr>
<tr><td>20 cm</td><td>10 cm</td></tr>
<tr><td>Smell and test</td><td colspan="2">Intensity of more than 1 point is not permitted</td><td colspan="2">Water must not give extraneous odors and flavors to fish meat</td></tr>
<tr><td>Temperature</td><td colspan="2">Temperature of water at the discharge point shall not exceed 3ºCas compared with average monthly temperature of the hottest month</td><td colspan="2">Temperature of water at the discharge point shall not exceed 5ºCas compared with average monthly temperature of the hottest month. Increasing of temperature more than 28ºC in summer and till 8ºC in winter is not allowed</td></tr>
<tr><td>Hydrogen exponent (pH)</td><td colspan="2">Shall not be beyond 6.5 8.5 pH</td><td colspan="2">Shall not be beyond 6.5 8.5 pH</td></tr>
<tr><td>Water salinity</td><td colspan="2">Dry residue shall not exceed 1000 mg/dm^3, including chlorides – 350 mg/dm^3 and sulphate - 500 mg/dm^3</td><td colspan="2">Rated according to water bodiesintoxications</td></tr>
<tr><td rowspan="3">Dissolved oxygen</td><td colspan="2" rowspan="3">No less than 4 mg/dm^3 in any periodof the year in a sample taken by 12 a.m. on the same day</td><td colspan="2">In winter shall be no less than</td></tr>
<tr><td>6 mg/dm^3</td><td></td></tr>
<tr><td colspan="2">No less than 6 mg/dm^3 in any periodof the year in a sample taken by 12 a.m. on the same day</td></tr>
<tr><td>BOD</td><td colspan="2">At 20ºC shall not exceed</td><td colspan="2"></td></tr>
</table>

6 SanR&N No 0172-04 “Hygiene requirements for protection of surface waters in RUz” and Attachment to Construction Norms and Rules (CNR) 1.03.01-96 “Guidelines on content, order, approval and endorsement of design estimate for enterprises, building construction”.

	3.0 mg/dm^3	6.0 mg/dm^3	At 20ºC shall not exceed 3.0 mg/dm^3. if in winter the dissolved oxygen content in water of the first*category fishing water bodies falls to 6.0 mg/dm^3, and in the second** – to4 mg/dm^3, then discharge is only permitted to wastewater that does not change the BOD	
COD	Shall not exceed			
	15.0 mg/dm^3	30.0 mg/dm^3	-	-
Causative agent (of a disease)	Not allowed			
Chemicals (pollutants)**	Shall not be contained in concentrations exceeding the MAC			

*- The first category includes water bodies, where valuable fish species are highly sensitive to oxygen are kept and reproduced)

** - The second group includes water bodies used for other aquatic economy needs.

47. The maximum allowed concentrations of most spread chemical pollutants are presented inTable7**.** As shown in the table, the national standards for irrigation water fully comply with FAO standards.

Table 7 Maximum Permissible Concentration of Pollutants in Water Bodies by Water Use Category (mg/m3)

Pollutants	**Water Use Category (Handbook of Environmentalist, Tashkent 2010)**					
	Fishery	**Municipal**	**Potable Water**		**Irrigation water for direct use without blending**	
			Nat	**WHO7**	**Nat**	**FAO8**
COD	15	30	30	-	40	-
BOD20, mgO2/L	3	3-6	3-6	-	10	-
pH	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
Water salinity	1,000	1,000	1,000-1,500	1,000	1,000	0-2,000
Including: sulphates	100	500	400-500	-	-	1,900
Chlorides	300	350	250-350	-	-	300
Ammonium nitrogen (ammonium salt) (NH_4^+)	0.5	2	0.5	-	1.5	0-5
Nitrogen	9.1	25	45	-	25	-
Nitrogen nitrite	0.02	0.5	3	-	0.5	0-10
Nitrite	0.08	3.3	3	3	-	-
Nitrate	40	45	45	50	-	-
3-Phosphate (PO_4^{3-})	0.3	1	3.5	-	1	0-2
Ether soluble	0.05	0.8	0.8	-	0.8	-

7 WHO, Guidelines for drinking water quality, Fourth edition, 2017

8 FAO Guidelines for interpretations of water quality for irrigation, http://www.fao.org/3/t0234e/t0234e01.htm

Oil products	0.05	0.3	0.1	-	0.3	-
Sodium alkyl sulfates (SAS)	0.1	0.5	0.5	-	0.5	-
Phenol	0.001	0.001	0.001-0.1	-	0.001	-
Fluorine (F)	0.05	1.5	0.7	1.5	1	-
Arsenic (As)	0.05	0.05	0.05	0.01	0.1	-
Iron (Fe)	0.05	0.5	0.3-3	-	5	-
Chromium (Cr^{6+})	0,001	0.1	0.05	0.05	0.1	-
Copper (Cu)	0,001	1	1	2	1	-
Zinc (Zn)	0.01	1	3	-	5	-
Cyanides	0.05	0.1	0	0	-	-
Lead (Pb)	0.03	0.1	0.03	0.01	0.2	-
Nickel (Ni)	0.01	0.1	0.1	0.07	-	-
Cadmium (Cd)	0,005	0.01	-	0,003	-	-
Cobalt (Co)	0.1	1	-	-	-	-
Molybdenum (Mo)	0.0012	0.5	0.25	-	-	-
Strontium (Sr^{2+})		2	7	-	-	-
Selenium (Se)	0.001		0.01	0.04	-	-
Mercury (Hg)		0.005	0.0005	0.006	-	-
Boron (B)		0.53		2.4	0.53	0-7.3

Noise and Vibration Standards

48. National and international noise standards are presented in Table 8. National norms comply with international standards for both daytime (55 dB) and nighttime (45 dB) periods in residential areas. They are more stringent for offices by 10 dB.

Table 8 Maximum Allowable Noise Standards: Comparison of National and International Maximum Allowable Noise Standards

Receiver	**National9**		**General EHS Guidelines10**	
	Day time (7.00 am – 11 pm) (dB)	**Night time (11.00pm – 7.00 am) (dB)**	**Day time (7.00 am – 10.00 pm)(dB)**	**Night time (10.00 pm – 7.00 am), (dB)**
Residential	55	45	55	45
Offices, commercial	60	-	70	70

49. There are some differences in defining daytime and nighttime noise standards between General EHS Guidelines and the national standards. General EHS Guidelines consider that a nighttime period is from 10 pm to 7 am, while the national standards define this period between 11 pm and 7 am. On this aspect, more stringent standards (General EHS Guidelines) will be applied for this Project.

50. The national standards for vibration levels in residential houses are provided in SanR&N 0331-16 “Residential house design in climatic conditions of Uzbekistan”. For

9 Sanitarian Norms and Rules (SanPiN) # 0331 (2016) Admissible noise level into the living area, both inside and outside the buildings, Table 10.2.4.2

10 World Bank Group, Environmental, Health, and Safety Guidelines, April 30, 2007, Washington, USA. https://www.ifc.org/wps/wcm/connect/29f5137d-6e17-4660-b1f9-02bf561935e5/Final%2B-%2BGeneral%2BEHS%2BGuidelines.pdf?MOD=AJPERES&CVID=nPtguVM in English. https://www.ifc.org/wps/wcm/connect/be37221a-fc47-4379-b539-eca3fe72c3e6/General%2BEHS%2B-%2BRussian%2B-%2BFinal_.pdf?MOD=AJPERES&CVID=nPtgFKk&ContentCache=NONE&CACHE=NONE in Russian.

residential houses, the standard is 67 dB for nighttime and 72 dB for daytime, with a frequency of 37 and 61 Hz. For non-continuous vibration, the standards should be decreased by 10 dB (Table 9). However, the standard does not provide any coefficient/allowance for non-frequent events such as passing trains. For the construction phase, the vibration limit will be 72 dB.

Table 9 National Vibration Standards

Timeline	**Permanent Vibration, dB**
Daytime	72
Nighttime	67

51. Therefore, as a result of comparison of both national and international standards for vibration, it was accepted that national standards for vibration in residential areas are more stringent, and therefore will be applied for the project, i.e. 72 dB during daytime and 65 dB during nighttime.

Soil Quality Standards

52. The soil quality standards are defined in the SanR&N # 0191-05 “Sanitary maximum permitted concentrations (MPC) and tentatively acceptable concentration of exogenous pollutants in the soil”. The national standards have been compared with international standards (Table 10).

Table 10 Maximum Allowable Concentration of Pollutants in Soil

Parameter	**Unit**	**Uzbek Standard11**	**Dutch Interventi on Values**	**EHS Guidelines12**
Antimony	mg/kg	4.5	22	There are no detailed numerical requirements
Arsenic	mg/kg	2.0	76	
Cadmium	mg/kg		13	to soil quality established by EHSGuidelines
Chromium	mg/kg	6.0		
Chromium VI	mg/kg		78	
Cobalt	mg/kg	5.0	190	
Copper	mg/kg	3.0	190	
Mercury (organic)	mg/kg	2.1	4	
Lead	mg/kg	32.0	530	
Molybdenum	mg/kg	10.0	190	
Nickel	mg/kg	4.0	100	
Selenium	mg/kg		100	
Zinc	mg/kg	23.0	720	
Cyanides	mg/kg		20 (free) 50 (complex)	
Benzene	mg/kg	0.3	1.1	
Ethylbenzene	mg/kg		110	
Toluene	mg/kg	0.3	32	
Xylenes (sum)	mg/kg		17	
Styrene (vinylbenzene)	mg/kg	0.1	86	
Phenol	mg/kg		14	
Vanadium	mg/kg	150.0	250	
Nitrates	mg/kg	130.0	-	
Sulphate (H_2SO_4)	mg/kg	160.0	-	

11 SanR&N #0191-05. Sanitary Permissible Concentrations (MPC) and Indicative Acceptable Concentrations (IAC) of Exogenous Harmful Substances in the soil (November 5, 2005).

12 General EHS Guidelines (footnote 15), Wastewater and Ambient Water Quality).

Total Petroleum Hydrocarbons (Mineral Oil)	mg/kg		5,000	
PAHs (total)	mg/kg		40	
Ammonia Nitrogen	mg/kg		1.5	

Waste Management

Municipal Solid Waste (MSW)

53. Related to SanR&N RUz No. 0297-1113, the composition of MSW is usually divided into the following main groups: paper, food waste, wood, metal, textiles, leather, rubber, glass, stones, coal and ash, room and yard estimates, fallen leaves, other unclassified parts and screenings (particles smaller than 15 mm).

54. In the conditions of Uzbekistan, the average annual rate of accumulation of solid waste per person in different cities varies, their composition is characterized by an increased accumulation of garbage due to street estimates, fruit and vegetable waste, and packaging material (including plastic). The largest part of the waste is made up of such fractions as paper, kitchen waste, metal, textiles, glass and stones.

55. The volumetric weight of MSW must be specified for individual populated areas of a particular region of the RUz. The norms of solid waste accumulation in settlements per 1 inhabitant should be taken on average at the level of 1.17 kg/day (0.003 cubic meters) or 437.7 kg per year (1.09 cubic meters per year).

56. MSW in terms of its physical and chemical parameters (humidity, calorific value, content of organic substances) is quite specific, contains a large amount of combustible material, nitrogen and carbon, which makes it possible to neutralize them in various ways (burning, use as fertilizer, neutralization by biofermentation on factory settings and special polygons).

Hazardous waste

57. The authorized bodies in the field of hazardous waste management related to the Project are:

- **The Cabinet of Ministers of the RUz** (1 - approves the list of hazardous waste and waste, the transboundary transportation of which is subject to state regulation; 2 - resolves issues regarding the provision of land plots for hazardous waste disposal);
- **Ministry of Health of the RUz** (1 - determines measures to protect the life and health of citizens from the harmful effects of waste; 2 - issues conclusions of the state sanitary and hygienic examination of waste management facilities; 3 - establishes sanitary and hygienic requirements for goods (products) produced from waste) and issues a hygienic certificate for them; 4 - provides methodological support in determining the degree of danger of waste to the life and health of citizens).

58. **Law of the RUz No. 362-II "On Waste"** (2002, updated in 2021) regulates relations in the field of waste management, including hazardous waste. The main objectives of this Law are to prevent the harmful effects of waste on the life and health of citizens,

13 SanR&N RUz No. 0297-11 (27.08.2011) - Sanitary Rules and Regulations on cleaning the territories of populated areas from solid household waste in the conditions of the RUz

the environment, reduce the generation of waste and ensure their rational use in economic activities.

59. According to the Law “On Waste”, the concept of “hazardous waste” is waste containingsubstances that have at least one of the hazardous properties (toxicity, infectivity, explosion hazard, firehazard, high reactivity, radioactivity) and are present in such quantities and in in such a form that theypose an immediate or potential danger to the life and health of citizens, the environment, both independently and in contact with other substances.

60. The project can include project activities related to the generation of asbestos-containing wastesand asbestos dust. These wastes can be generated during rehabilitation works on pipes changingcould posea serious health hazard to people living in houses near construction sites. National regulation requires that asbestos wastes be disposed on the municipal landfills in compliance with requirements of **SanR&N 0158-04 “Collection, transportation and disposal of asbestos contained materials in condition of Uzbekistan”**. This SanR&N regulates a procedure of wasted asbestos handling and describes the procedure of collecting wasted asbestos.

61. Asbestos wastes belonging to Hazard Class IV could be disposed on MSW without limitations (quantity). Asbestos wastes should be disposed of in landfills with engineered liner systems. This legislation also provides specifications of landfill locations and organization (arrangement and structure).

62. According the international best practice proper disposal of ACM is important not only to protect the community and environment but also to prevent scavenging and reuse of removed material. ACM shouldbe transported in leak-tight containers to a secure landfill operated in a manner that precludes air and water contamination that could result from ruptured containers”. **Thus**, **international standards and practices will prevail over national legislation on** the **handling and disposal** of **asbestos.**

63. In case of presence of asbestos materials, the Project Contractor will develop ACMMP that includes identification of hazards, the use of proper safety gear and disposal methods. Sample ACMMPis provided in Appendix 12.1.

64. Inventory of waste generation and disposal is carried out in accordance with the requirements of the **Decree of the Cabinet of Ministers of the RUz. No. 14 “On approval of the regulations on theprocedure for developing and approving draft environmental standards” (2014, updated in 2022)**and includes:

- results of a survey of sources of waste generation with obtaining data on their qualitative and quantitative characteristics, while to determine the amount of waste generated, the following are used:
- analytical method, which consists in determining the quantitative yield of waste underconditions close to existing technological processes;
- statistical method, which is a set of statistical techniques and methods that reveal the conditionsfor waste generation;
- balance sheet and technological schemes of main, auxiliary and other production;
- information on the composition of raw materials (materials, fuel), nomenclature and volumes of products, operating mode of technological equipment (submitted in the form of an official certificate);
- a plan diagram in a coordinate system on which the sources of waste

generation and their locations (temporary storage) are plotted;

- passports for each type of waste indicating the place and technological process of their formation, physical-mechanical, physical-chemical, sanitary-hygienic and consumer properties, education standards in accordance with Appendix No. 14 to this Decree.

65. The environmental hazard class of waste is determined by the classification catalog of waste in theform in accordance with Appendix #15, and the obtained data on all generated production and consumption waste is summarized in an inventory sheet in the form in accordance with Appendix #16.In order to improve the process of temporary disposal of waste, reduce its extent the danger of impact on humans and the environment, as well as solving issues of their possible further processing and disposal, planned environmental protection measures are being developed in accordance with Appendix#18.14

66. Transportation of hazardous waste is carried out by vehicles specially equipped for this purpose inthe presence of an environmental waste certificate and a permit issued in the manner prescribed by law.The transport organization is responsible for the safe transportation of hazardous waste.

National Social and Labor Requirements

67. The **Constitution of the RUz (1.05.2023)** includes a chapter on the economic and social rights ofcitizens. According to it, everyone has the following rights:

(i) Everyone has the right to decent work, to free choice of profession and occupation, favorable working conditions that meet the requirements of safety and hygiene, to fair remuneration for work without any discrimination and not below the established minimum wage, as well as protection from unemployment in the manner prescribed by law.

The minimum wage is determined taking into account the need to ensure a decent standard of living for a person.

It is forbidden to refuse to hire women, dismiss them from work and reduce their wages for reasons related to pregnancy or the presence of a child. (Article 42).

(ii) The state takes measures to ensure the employment of citizens, protect them from unemployment, and reduce poverty.

The state organizes and encourages professional training and retraining of citizens. (Article 43).

(iii) Forced labor is prohibited except in the execution of a sentence imposed by a court decision, orin other cases provided for by law.

Any form of child labor that poses a threat to the health, safety, morals, mental and physical development of a child, including those that prevent him from receiving an education, is prohibited. (Article 44).

(iv) Everyone has the right to rest.

Employees have the right to rest by establishing the length of working hours, days off and non-working holidays, paid annual leave. (Article 45).

(v) Everyone has the right to social security in old age, in case of loss of ability to

14 Decree of the Cabinet of Ministers of the RUz No. 14 “On approval of the regulations on the procedure for developing and approving draft environmental standards” (2014, updated in 2022)

work, unemployment, as well as loss of a breadwinner and in other cases provided for by law.

The amounts of pensions, benefits and other types of social assistance established by law cannot be lower than the officially established minimum consumer expenses. (Article 46).

68. **Decree of the President of RUz # UP-5876 "On Approval of the Concept of the State Policy of the RUz in the Sphere of International Relations"** (15.11.2019). The decree noted that the provisions of the Constitution of the RUz are being actively implemented, proclaiming, and guaranteeing that the people of Uzbekistan are citizens of the RUz, regardless of their nationality, and the RUz ensures respect for the languages, customs and traditions of nations and nationalities living on its territory, creating conditions for their development. The decree also states that the representatives of more than 130 ethnic groups are living in Uzbekistan, using the same rights and opportunities provided by the Constitution and laws of the RUz, working fruitfully in various sectors of the economy and the social sphere, the fields of science and culture, making a worthy contribution to the prosperity of Uzbekistan and strengthening its independence, increasing the authority and image of the republic in the international arena. The decree approves: (i) the Concept of the state policy of the RUz in the field of interethnic relations; (ii) the "Roadmap" for the implementation of the Concept of the state policy of the RUz in the field of interethnic relations in 2019 – 2021; and (iii) establishes that coordination of implementation and monitoring of the high-quality and timely implementation of the Concept and the Roadmap are carried out by the Committee on Interethnic Relations and Friendly Relations with Foreign Countries under the Cabinet of Ministers of RUz.
69. **Decree of the President of RUz # UP-6012 "On Approval of the National Strategy of the RUz on Human Rights"** (22.06.2020) states that the RUz has acceded to more than 80 international human rights instruments, including 6 major treaties and 4 optional protocols of the United Nations (UN), on an ongoing basis submits to the Human Rights Council and UN treaty committees the national reports on their implementation. In addition, practical measures are being taken to harmonize national legislation with international legal standards in the field of human rights. Appendix 2 to the Decree presents the "Road Map on the Implementation of the National Strategy of the RUz on Human Rights" and in it line 17 includes the provisions on "Implementation of the Concept of the state policy of the RUz in the field of interethnic relations for 2019-2021, ensuring the social and cultural rights of national minorities."
70. **Joint Resolution of the Kengash of the Legislative Chamber of the Oliy Majlis of RoU and the Kengash of the Senate of the Oliy Majlis of RUz "On the National Action Plan for the implementation of concluding comments and recommendations of the UN Committee on the Elimination of Racial Discrimination Following the consideration of the tenth - twelfth periodic reports of the RUz to fulfill the provisions of the International Convention on the Elimination of All Forms of Racial Discrimination at 2020-2022"** № 513-IV dated 1510.2020. The joint resolutions approved the "National Action Plan for the implementation of the Concluding Observations and Recommendations of the UN Committee on the Elimination of Racial Discrimination following the consideration of the Tenth - Twelfth periodic reports of the RUz on the implementation of the provisions of the International Convention on the Elimination of All Forms of Racial Discrimination for 2020 – 2022." The National Action Plan includes provision on Definition of racial discrimination and legislation, as well as the rights of ethnic minorities and required to "take immediate action to develop and enact legislation on the rights of persons belonging to ethnic minority groups, in consultation with all

ethnic groups" through "studying the issue of the development and adoption of the law of the RUz on Equality and Non-Discrimination."

71. **The Ministry of Employment and Labor Relations of the RUz (MoELR)** is the main state institution responsible for labor, employment, and social protection policy making. The ministry is tasked with the development and regulation of the labor market and ensuring the employment of the population, the regulation of labor relations and labor protection, the provision of social services for thepopulation, and medical-social rehabilitation of persons with disabilities.

72. The supervision and monitoring of compliance with Labor Code requirements and the protection of labor rights of citizens is implemented by **the State Labor Inspection under the MoELR of the RUz**, and its territorial subordinate structures according to the Statement on the State LaborInspection.15

73. The key social legal documents are presented further in this section and briefly summarized in the **Table 11** below.

Table 11 List of key social laws

Law/regulation	**Date of adoption**	**Date of last amendment**
Civil Code	29.08.1996	12.10.2021
Labor Code	21.12.1995	10.02.2022
Law on Population Employment	13.01.1992	20.10.2020
Law on Public Health	29.08.1996	03.08.2021
Law on Sanitary and Epidemiological Welfare of the Population	26.08.2015	27.04.2021
Law on Industrial Safety of Hazardous Production Facilities	28.09.2006	03.01,2018
Law on Licensing, Permission and Notification Procedures	14.07.2021	
Law on Labor Protection	06.05.1993	04.12.2019
Law on Appeals of Individuals and Legal Entities	03.12.2013	11.03.2020

74. **The Civil Code of the RUz** (adopted on 29.08.1996, last amended on 12.10.2021) defines the legal status of participants of civil relations, the grounds and procedure of implementation of property rights and other proprietary rights, rights on intellectual property, regulates the contractual and other obligations, as well as other property and related personal non-property relations.

75. **The Labor Code of the RUz**. The Labor Code of the RUz, introduced in April, 1996, is consideredas a base document for work relations. It addresses provisions relating to non-discrimination in labor relations, protection of labor rights, subjects of labor relations, representation of workers and employers,collective agreements and collective bargaining, job placement, labor contracts, working time, rest andleave, wages, guarantee and compensation payments, labor discipline, the material responsibilities of labor contract parties, labor protection, additional guarantees and advantages to certain categories of workers, labor disputes, and State social security.

76. The Code regulates the labor relations and ensures a balance of the interests of employees, employers, and the state. The main principles of the code are: (i) equality of labor rights, prohibition ofdiscrimination in the sphere of labor and occupation; (ii) freedom of labor and the prohibition of forcedlabor; (iii) social partnership in the

15 Attachment #3, Resolution of the Cabinet of Ministers #1066 of 31.12.2018 "On measures to improve the performance ofthe Ministry of Employment and Poverty Reduction of the RUz."

sphere of labor; (iv) guarantee of ensuring labor rights and performance of labor duties; (v) inadmissibility of deterioration of the legal status of the employee.

77. Age of employment. Article 5 of the Labor Code states that forced labor, that is, compulsion to perform work under the threat of any punishment is prohibited. The right to work is given to persons aged 16 and over (Article 20). Article 25 states employers' responsibility to prevent the use of forced and worst forms of child labor. Articles 49 and 51 of the Administrative Code Uzbekistan impose finesfor violation of the above rules on forced and child labor.

78. Wages and deductions. Agreements and collective agreements establish the form and amount of compensation for the works performed. Minimum wage provided to employee cannot be less than the minimum monthly wage established by legislation (no maximum pay is legally specified). Changing the conditions of remuneration in the direction unfavorable for the employee is not allowed without theconsent of the employee. Payment in goods is prohibited, except in cases established by the Governmentof the RUz.

79. Women. The law emphasizes prohibition of discrimination in the field of wages and ensuring equalpay for men and women for work of equal value. Code prohibits refusing to hire or reducing wages forreasons of pregnancy or having children, includes additional measured for labor protection for women,transfer of pregnant women to work that is easier or excludes the impact of adverse production factors, transfer to easier work of the parent taking care of the child under 2 years, right to shortened duration of work, provision of additional day off and other provisions.

80. Work time. The standard workweek is 40 hours, less allowed for persons under 18 years of age, workers with disabilities of I and II groups, employees working in unfavorable conditions, certain workers (medical workers, teachers and other) whose work is associated with increased emotional / mental / nervous tension, one of the parents (guardian) of a child under the age of three working in a budget-funded organization. For employees with regular working hours, duration of the daily shift is 8 hours for a five-day working week and 7 hours for a six-day working week. Number of hours per day and days per week is set in the contract/agreement between employer and employee. The law also includes provisions regarding type and time for rest provided to employee (e.g., breaks for rest and meal, weekends, holidays), as well as on time of release from work not counted as rest time (e.g. maternity leave, temporary disability period, etc.).

81. Vacation. In addition to public holidays, employees must receive at least 21 working days of paidleave per year, employees under 18 and disabled employees (groups I and II) – 30 calendar days. Additional vacation days are provided to those who work in unhealthy and unfavorable working conditions, in adverse climatic conditions, long-term employees of company/sector, other groups.

82. Overtime work. The law establishes that compensation for overtime work is paid at least twice theregular wage. The duration of overtime work should not exceed 4 hours for 2 consecutive days (in jobswith unfavorable working conditions - 2 hours a day) and o120 hours a year. The employer is obliged to ensure that the employee's overtime hours are accurately recorded. Overtime work is not allowed when the working shift lasts 12 hours, as well as when working in harmful and dangerous conditions.

83. Labor disputes. The procedure for considering individual labor disputes on the application of laborlegislation and other legal acts on labor, an employment contract is determined by the Labor Code, andthe procedure for considering cases on labor disputes in courts is determined, in addition, by the Civil Procedure Code. Individual labor disputes are considered by commissions on labor disputes or by court.An

employee has the right, at his choice, to resolve a labor dispute with a labor dispute committee or directly with a court. Any individual labor dispute at any stage of consideration can be referred to a mediator in accordance with the Law of the RUz "On Mediation".

84. **Law on population employment** (13.01.1992, new edition #ZRU-36 dated 21.06.2006, new edition last amendment 20.10.2020). It regulates labor relations of individuals employed with labor contracts by enterprises, institutions, organizations of all types of ownership forms, including those contracted by individuals. This law is considering interests of employees and employers provide the efficient function of the labor market, just and secure labor conditions, protection of labor rights and employees health, promote to the growth of labor productivity, increase of work quality, raising on thismatter welfare and social livelihood level of the population.

85. **Law on Public Health** (29.08.1996, last amendment 03.08.2021). The main objectives of legislation on the protection of public health are: guaranteeing the rights of citizens to health care fromthe state; the formation of a healthy lifestyle of citizens; legal regulation of the activities of state bodies,enterprises, institutions, organizations, public associations in the field of public health.

86. **Law on Sanitary and Epidemiological Welfare of the Population** (26.08.2015, last amended on 27.04.2021). It regulates social relations on sanitary-epidemiological well-being and radiation safety,the right person to a healthy environment, the rights and guarantees of their implementation. Law prohibits the production, use and sale of new types of raw materials, chemicals, technological equipment, processes and tools, etc, not registered in the Ministry of Health of the RUz. In addition, law restricts the use of chemicals, means and methods used in the practice of household and drinking water supply, in the production and processing of food products, stimulants and growth regulators of agricultural plants and animals, pesticides, perfumes and cosmetic products in the case of adverse effects on human health until the developer provides scientifically based data on the safety of these substances, means and methods.

87. **Law on Industrial Safety of Hazardous Production Facilities** (28.09.2006, last amended in 03.01.2018). This law provides the legal basis for the environmental requirements for handlinghazardous substances related to the impact on the living organism to I, II and III classes of danger, explosives, industrial wastes containing substances in concentrations which are hazardous to human health and the environment.

88. **Law on Licensing, Permission and Notification Procedures** (14.07.2021). The purpose of this Law shall be to regulate relations in the field of licensing, permitting and notification procedures. ThisLaw shall not apply to relations with respect to: use of objects of intellectual property, as well as entrepreneurial activities which is carried out on the basis of a complex business license agreement (franchising agreement); state registration and recording of business entities, transactions, rights and property; accreditation, certification, standardization, metrology and technical regulation; state ecological expertise; etc.

89. **Law on Labor Protection** (06.05.1993, new edition № ZRU-410 dated 22.09.2016, new edition last amendment 04.12.2019). The law is aimed at regulating the relations in the field of labor protection.The law determines the main directions of state policy in the field of labor protection, defines the powersof a specially authorized state body in the field of labor protection, specifies rights and obligations of an employee and an employer, as well as includes provisions on certification of workplaces according to working conditions, mandatory medical examinations, investigation and registration of

accidents at work and occupational diseases, state supervision and control over compliance with labor protection, rights of trade unions.

90. Resolution of Cabinet of Ministers of RUz #349 **"On Additional Measures on the Elimination of Forced Labor in Uzbekistan"** (10.05.2018, last amended on 31.12.2018) and Resolution of the Cabinet of Ministers of the RUz #1066 **"On Measures to Improve Activities Ministries of Employment and Labor Relations in the RUz"** (31.12.2018, last amended on 02.03.2022) prohibit and provide detail information on types of forced labor, types of governmental organizations and its staff, monitoring mechanism of local governorates (khokimiyats). According to this decree, financial resources of the Public Works Fund, which was established under the Ministry of Employment and Labor Relations, will be used for any public works in Uzbekistan.

91. **Law on Appeals of Individuals and Legal Entities** (03.12.2013, new edition № ZRU-445 dated11.09.2017, new edition last amended on 11.03.2020). The purpose of this Law is to regulate relationsin the field of appeals of individuals and legal entities (hereinafter referred to as appeals) to state bodiesand state institutions (hereinafter referred to as state bodies), as well as to their officials. Article 5 specifies the applications, suggestions and complaints as the types of appeals that can be submitted in verbal, written or electronic forms. An appeal received by a state body, organization or their official issubject to registration on the same day, and in case of receipt after the end of working hours, on the nextbusiness day. Refusal to register an appeal is not allowed. Registration of verbal appeals is not required(Article 23). Article 28 states that the application or complaint is considered within fifteen days from the date of receipt by the state body, organization or their official, and within one month in case the additional study and (or) verification is required (in the latter care the information is provided to the individual or legal entity that submitted the appeal within ten days). It was noted, that according to thelaw anonymous appeals are not considered (Article 29).

National Land Use Requirements

92. The key land use documents are presented further in this section and briefly summarized in the **Table 12** below.

Table 12 List of key land use laws

Law/regulation	**Date of adoption**	**Date of last amendment**
Civil Code	29.08.1996	12.10.2021
Land Code	30.04.1998	17.08.2021
Law on Lease	19.11.1991	21.04.2001
Law on Farms	30.04.1998	24.02.2004
Resolution of Cabinet of Ministers of RUz # 911 "On Additional Measures to Ensure Guarantees of Property Rights of Individuals andLegal Entities and to Improve the Procedure for Withdrawal of Land Plots and Payment of Compensation"	16.11.2019	
Resolution of Cabinet Ministers of RUz # 1060 "On measures to improve the procedure for state registration of rights to real estate"	29.12.2018	
Resolution of Cabinet Ministers of RUz # 3857 "On measures to improve the effectiveness of training and realizing projects with participation of IFIs and foreign government financial organizations"	17.07.2018	

Decree of the President of RUz # 5495 “On measures on cardinalimprovement of investment climate in the RUz"	01.08.2018	
Decree of the Cabinet of Ministers of RUz # 476 “On Measures to Implement the Farms Development Concept for 2004-2006”	30.10.2003	
Decree of the Cabinet of Ministers of RUz # 97 “On Compensation of Losses to individual and Legal Entities as a Result of Land PlotsExpropriation for State and Public Needs”	29.05.2006	
Decree of the Cabinet of Ministers of RUz # 146 “In Improvement ofthe Procedure for Provision of Land Plots, Protection of the Rights ofLegal Entities and Individual to Land Plots for Improvement of the Architectural Appearance of Residential Areas of the Republic, Optimal Use of their Lands for Development”	25.05.2011	
Decree of the Cabinet of Ministers of RUz # 22 “On Approval of the Regulation on the Farm and Optimisation and Liquidation procedure”	31.01.2013	

93. **Civil Code of RUz** (adopted on 29.08.1996, last amended on 12.10.2021) defines general rules ofproperty seizure, determination of property cost and rights for compensation, terms of rights termination.
94. **Land Code of RUz** (dated 30.04.1998, last amendment 17.08.2021). The Land Code is the mainregulatory framework for land related matters in Uzbekistan. The land code regulates allocation, transferand sale of land plots, defines ownership and rights on land. It describes responsibilities of different state authorities (Cabinet of Ministers, region, district, and city khokimyats) in land management; rightsand obligations of land possessor, user, tenant, and owner; land category types, land acquisition and compensation issues, resolution of land disputes and land protection. The land code also defines the terms of rights termination on land plot, seizure, and land acquisition of land plot for state and public needs, and terms of seizure of land plot in violation of land legislation:

    - Legal entities can have rights for land in the form of permanent tenure, permanent use, fixed term (temporary) use, lease, and ownership (Article 17):
    - Permanent land tenure is granted to enterprises, institutions and organizations for agriculture and forestry, as well as for other purposes if allowed by law (Article 20).
    - Permanent or fixed-term land use may be granted to non-agricultural entities, international companies/associations/organizations (Article 20).
    - Land lease is a fixed-term, chargeable tenure, and use of the land under the terms of a Lease Agreement. The land is leased by khokims of districts and cities to legal entities in the RUz (Article 24, Article 1 of the Law on Lease).
    - Land ownership results, by law, from privatization of trade and service facilities together withthe land plot on which they are located (Article 18).
    - Agricultural land may be allocated to individual farmers to run a farm (treated as a legal entity)and companies involved in agricultural production (Article 46). Land allocated to a farm may not be subject to privatization, sale, donation, or exchange. Land tenants or users need to pay for the land and are charged with annual land tax estimated based on quality, location, and availability of irrigation systems (Article 28). Leaseholders are paying a lease fee that equals to the land tax. The Land Code identifies that land tenants, leaseholders, users, and owners, areeligible for compensation for losses and damages in connection with land acquisition or expropriation, including lost

profit (Article 41).

95. **Law on Lease** (No 427-XII, dated 19.11.1991 and last amended on 21.04.2001) regulates lease arrangements related to chargeable possession and use of land, other natural resources as well as assetsrequired to independently carry out economic and other operations by the tenant (Article 1). Land and other natural resources may be leased. Agricultural land may be leased only for agricultural production(Article 3).

96. According to Article 13, any changes in the terms and conditions of the Land Lease Agreement (LLA) and its termination are to be agreed by the parties. At the request of one of the parties, the LLAcan be terminated by the decision of the court should the other party violate the terms and conditions ofthe LLA.

97. **Law on Farms** (No 602-I, dated 30.04.1998 and last amended 24.02.2004) regulates the process of establishment, operation, reorganization, and liquidation of farms. The law treats a farm as a businessentity engaged in the farming of agricultural products using leased land. Farms may only lease land foragricultural production and other farming activities. The right to lease is granted based on an open competition for a period of up to fifty years or minimum thirty years (Articles 1, 5 and 7).

98. **The Law on Farms states (Article 7)** that a farm is considered to be established as soon as the stateregistration process is completed, and the farm founder (Farm Manager) has concluded a long-term LLA. A farm is entitled to open and maintain bank accounts and have a seal with the name of the farm.The Law on Farms stipulates rights (Article 16) inter alia to run a farming business, plant and harvest crops on the leased land in line with the farm statute and LLA provisions, enter into future contracts and request advance payments for farming products, sell products to consumers, set prices for farm products as well as works and services, award supply contracts (for instance for electricity, fuel and lubricants, mineral fertilizers, chemicals, water, technical and other services), generate and dispose of unlimited income (profit) from the farming business including money in the bank account, purchase shares and other securities, obtain loans, raise money and benefit from any privileges and preferences granted to small and private enterprises, and file legal actions to protect these rights and legitimate interests.

99. **Resolution of Cabinet of Ministers of RUz # 911 "On Additional Measures to Ensure Guarantees of Property Rights of Individuals and Legal Entities and to Improve the Procedure for Withdrawal of Land Plots and Payment of Compensation"** (16.11.2019). This resolution deals with regulations that determine the procedure for withdrawal/redemption of a land plot or its part, as well as the procedure for calculating the amount of compensation to citizens and legal entities for demolished residential, industrial, and other buildings, structures and trees and crops in connection withthe withdrawal/redemption of land plots for state and public needs. The resolution envisages proceduresfor acquisition of lands for state and public needs that belong to individuals (individual entrepreneur, citizen of the RUz, foreign citizen, and stateless persons) and legal entities (business entities, non-governmental organizations) based on ownership, permanent use or temporary use, as well as in the framework of investment projects and compensation for property owners including for the properties located on impacted lands.

100. **Resolution of Cabinet Ministers of RUz # 1060 "On measures to improve the procedure for state registration of rights to real estate"** (29.12.2018). The resolution is aimed at creating the favorable conditions for registering rights to real estate, includes the Regulation on the procedure for state registration of rights to real estate, providing for: definition of uniform rules for state registration of rights to real

estate, provision of free access to the information of the State Register to legal entities and individuals, introduction of information and communication data exchange between authorized bodies in order to create favorable conditions for legal entities and individuals to register their rights to real estate, state registration of rights to unfinished buildings and structures, issuance of an electronic extract from the State Register of Rights to Real Estate, introduction of a pre-trial dispute resolution mechanism.

101. According to this Regulation presented in the Annex 1 to Resolution, information on the right of ownership and other real rights to real estate, including the occurrence, transfer, restriction and termination of these rights, as well as transactions with them from February 1, 2019, is provided through information and communication systems to the body carrying out state registration, bodies local executive authorities, state notary offices, territorial divisions of the Ministry of Construction of the RUz, as well as other authorized bodies within one day from the date of the relevant actions (Article 7).
102. Article 21 lists the documents based on which the emergence of rights to land plots is registered, and among them mentions the following “registration of the right of lifelong inheritable possession of a land plot - a decision of local government bodies, adopted within the limits of authority, on the provision of a land plot or a certificate of the right to inheritance issued by a state notary's office, or a state warrant issued by the khokim of the district (city), about acquiring this right on the basis of an auction”.
103. **Resolution of Cabinet Ministers of RUz # 3857 “On measures to improve the effectiveness of training and realizing projects with participation of IFIs and foreign government financial organizations”** (17.07.2018). The resolution provides that payment of compensation for the land acquisition, demolition of houses, other structures, plantings within the framework of projects with the participation of IFIs, if it is agreed and stated in agreements, then will be carried out by authorized bodies in accordance with the requirements of IFIs or Foreign Governmental Finance Organizations.
104. **Decree of the President of RUz # 5495 “On measures on cardinal improvement of investment climate in the RUz"** (01.08.2018). The resolution provides that the adoption of decisions on the seizure of land for state and public needs is allowed only after an open discussion with interested parties whose land plots are planned to be seized, as well as assessing the benefits and costs; demolition of residential, industrial premises, other structures and structures belonging to individuals and legal entities, with the withdrawal of land plots is allowed after the full compensation of the market value of immovable property and losses caused to owners in connection with such withdrawal.
105. **Decree of the Cabinet of Ministers of RUz # 476 “On Measures to Implement the Farms Development Concept for 2004-2006”** (30.10.2003) approves the Programme for Implementation of the 2004-2006 Farms Development Concept and approves the Regulation on the Long- Term Lease of Land by Farmers (Appendix No.7). This Regulation sets out the procedure for allocating land to farmers based on long-term lease arrangements and provides a template of the Long-Term LLA (Appendix No.8).
106. **Decree of the Cabinet of Ministers of RUz # 97 “On Compensation of Losses to individual and Legal Entities as a Result of Land Plots Expropriation for State and Public Needs”** (29.05.2006). The Decree regulates the compensation of losses to individuals and legal entities resulted from expropriation of land plots for state and public needs. This regulation determines the procedure for land expropriation and sets out the procedure for calculating compensations for individuals and legal entities

for the loss of residential, industrial, and other buildings and structures in connection with the land expropriation.

107. **Decree of the Cabinet of Ministers of RUz # 146 "On Improvement of the Procedure for Provision of Land Plots, Protection of the Rights of Legal Entities and Individual to Land Plots for Improvement of the Architectural Appearance of Residential Areas of the Republic, Optimal Use of their Lands for Development"** (25.05.2011). This Decree is aimed at improving the land allocation procedure for, ensuring the protection of the right of legal entities and individuals to land plots to improve the architectural appearance of residential areas in the country, the optimal use of their land for development in accordance with the Land Code and the Urban Development Code. The resolution approved two regulations: i) the Regulation on Land Allocation for Urban Development and Other Non- agricultural Purposes, and ii) Regulation on the Compensation Process for Landowners, Users, Tenants, and Owners, including for losses in trees and crops.

108. **Decree of the Cabinet of Ministers of RUz # 22 "On Approval of the Regulation on the Farmand Optimization and Liquidation procedure"** (31.01.2013) approves the Regulation on the Farmland Optimization and Liquidation Procedure. According to Clause 4 of the Regulation, the voluntary reduction of the size of the farmland is to be completed against a respective application of the Farm Manager to be submitted to the district (city) khokim. If the farm wants to increase the size of the farmland, it should participate in the tender for long-term lease of state-owned land.

109. The Regulation determines (Clause 9) that land optimization is to be completed against a respective approval by the Regional Land Commission of the khokim's Decree to modify the size of the farmland and introduction of respective amendments in the LLA signed between the District (City) khokim and the Farm Manager.

National Gender related Requirements

110. From the first days of independence of the RUz, its President and Government identified the problem of legal, economic and social protection of motherhood and childhood, creating conditions for the comprehensive development of women and increasing their role in society as a priority task.

111. The Basic Law of the RUz - the **Constitution (2023)**, contains provisions designed to protect women's rights:

- In the RUz, human rights and freedoms are recognized and guaranteed in accordance with generally recognized norms of international law and in accordance with this Constitution. Human rights and freedoms belong to everyone from birth.

  In the RUz, all citizens have the same rights and freedoms and are equal before the law, regardless of gender, race, nationality, language, religion, beliefs, social origin, or social status (Article 19).

- Everyone has the right to decent work, to free choice of profession and type of activity, favorable working conditions that meet safety and hygiene requirements, to fair remuneration for work without any discrimination and not lower than the established minimum wage, as well as to protection from unemployment in the manner prescribed by law.

  It is prohibited to refuse to hire women, dismiss them from work or reduce their wages for reasons related to pregnancy or the presence of a child (Article 42).

- Women and men have equal rights.

The state ensures equal rights and opportunities for women and men in managing the affairs of societyand the state, as well as in other spheres of public and state life (Article 58).

112. The RUz acceded to the **Convention on the Elimination of All Forms of Discrimination againstWomen** in accordance with the Resolution of the Oliy Majlis of the RUz dated May 6, 1995 No. 87-I “On the accession of the RUz to the Convention on the Elimination of All Forms of Discrimination against Women, adopted in the New York December 18, 1979."

113. The purpose of the **Law of RUz #ZRU-562 “On guarantees of equal rights and opportunities for women and men” (2019, amended in 2023)** is to regulate relations in the field of ensuring equal rights and opportunities for women and men.

114. According to this Law, women and men have equal rights and opportunities guaranteed by the state. The state guarantees women and men equal rights in the exercise of personal, political, economic,social and cultural rights. The state guarantees women and men equal participation in managing the affairs of society and the state, the electoral process, ensuring equal rights and opportunities in the fieldof health, education, science, culture, labor and social protection, as well as in other areas of state and public life.

115. In accordance with this Law the main directions of state policy in the field of ensuring equal rightsand opportunities for women and men are:

- formation and improvement of the regulatory framework in this area;
- development and implementation of state programs, national action plans and strategies in thisarea;
- creating a culture of equal rights and opportunities for women and men;
- ensuring equal participation of women and men in managing the affairs of society and the state;
- ensuring equal rights and opportunities for women and men in combining work and familyresponsibilities;
- social protection and support for family, childhood, formation of responsible motherhood andfatherhood;
- protecting society from information aimed at direct and indirect discrimination based ongender;
- involvement of citizens' self-government bodies, non-governmental non-profit organizations and other civil society institutions in the development and implementation of state programs, national action plans and strategies in this area;
- financing of measures to ensure equal rights and opportunities for women and men from the State Budget of the RUz and other sources not prohibited by law;
- development of effective cooperation at the national, regional and international levels in orderto achieve equal rights and opportunities for women and men.

116. Public administration in the field of ensuring equal rights and opportunities for women and men iscarried out by the Cabinet of Ministers of the RUz, the Republican Commission on Increasing the Roleof Women in Society, Gender Equality and Family, as well as government bodies within their powers. The powers of the main bodies guaranteeing the rights of women, according to the Law “On guaranteesof equal rights and opportunities for women and men”, are presented below.

117. The powers of the **Cabinet of Ministers of RUz** in the field of ensuring equal rights

and opportunities for women and men:

- ensures the implementation of a unified state policy aimed at achieving equal rights and opportunities for women and men in all spheres of society;
- ensures the development, approval and implementation of state programs, national action plansand strategies in the field of ensuring equal rights and opportunities for women and men and the allocation of the necessary funds for their financing;
- ensures interaction between state and economic management bodies, local government bodiesin the field of ensuring equal rights and opportunities for women and men;
- establishes temporary special measures to ensure the implementation of gender policy.

Powers of the Republican Commission on increasing the role of women in society, gender equality and family:

- participates in the implementation of government policy aimed at increasing the role of womenin society, achieving gender equality between women and men, strengthening the family, protecting motherhood, paternity and childhood;
- promotes the achievement of de facto equality between women and men in all spheres of society, ensuring the principle of non-discrimination on the basis of gender when promoting tosenior positions in the public service;
- participates in the development and implementation of state programs, national action plans and strategies in the field of ensuring equal rights and opportunities for women and men;
- takes measures to study the current state of affairs in ensuring gender equality, the rights and legitimate interests of women, critically analyze existing problems and eliminate them;
- takes measures to provide social and legal support for women, increase the socio-economic andsocio-political activity of women on an equal basis with men;
- coordinates the activities of government bodies aimed at achieving equal rights and opportunities for women and men in all spheres of society;
- develops proposals for the creation of special institutions to protect the rights and provide assistance to persons who find themselves in difficult life situations due to direct or indirect discrimination based on gender;
- submits to the Cabinet of Ministers of the RUz proposals for the adoption of temporary specialmeasures to ensure the implementation of gender policies and their abolition;
- exercises control over the implementation of legislation guaranteeing equal rights and opportunities for women and men;
- receives, considers and analyzes requests from individuals and legal entities on issues of ensuring equal rights and opportunities for women and men and takes measures to restore violated rights;
- approves the plan for conducting a gender audit and determines the methodology for conductinga gender audit;

- cooperates with international organizations, relevant bodies of foreign countries in the field ofensuring equal rights and opportunities for women and men and compliance with internationalstandards in this area;
- annually hears information from the chairman of the Committee on Family and Women underthe Ministry of Employment and Poverty Reduction of the RUz on the activities of the committee and on systemic problems in the field and their solutions.

118. Powers of the **Committee on Family and Women under the Ministry of Employment and Poverty Reduction of the RUz** and its territorial divisions:

- participates in ensuring the implementation of a unified state policy aimed at achieving equal rights and opportunities for women and men in all spheres of society;
- takes measures to ensure guarantees of equal rights and opportunities for women and men established by law;
- participates in the development and implementation of state programs, national action plans and strategies in the field of ensuring equal rights and opportunities for women and men;
- ensures regular collection and analysis of statistical data and information on the provision of guarantees established by legislation on guarantees of equal rights and opportunities for women and men;
- submits mandatory warnings to government bodies, organizations and their officials about violations of legislation on guarantees of equal rights and opportunities for women and men, as well as proposals for taking measures to eliminate the causes and conditions conducive to the manifestation;
- submits statements (complaints) and lawsuits to the courts on the rights and legitimate interests of women;
- develops proposals to ensure equal rights and opportunities for women and men, as defined by law;
- where necessary, attracts managers and specialists from government agencies, scientific institutions and other organizations, creates working groups on issues of ensuring equal rights and opportunities for women and men.

119. The legislative system of the RUz, regulating the rights of women, in addition to the above- mentioned normative documents, consists of the Family Code, the Code of Administrative Responsibility, the Civil, Criminal, Labor Codes, the Laws “On Citizenship” (2020, amended in 2023), “On Education” (2020, amended in 2023), “On the protection of the health of citizens” (1996, amended in 2023), “On employment” (2020, currently being amended), as well as a number of other legislative acts.

National Community Health and Safety Requirements

120. In ensuring the rights and freedoms of citizens, the RUz is not limited only to domestic actions, but also carries out a number of actions to apply international norms governing individual rights and freedoms. This is evidenced by Uzbekistan’s accession to more than 60 international legal documents to this day, in particular, the **Universal Declaration of Human Rights** adopted by the UN in December 10, 1948, which is one of the main documents providing a guarantee of rights and freedoms, as well as the right to information.
121. This Declaration is the most leading of all normative legal acts, regulating and ensuring guarantees of human rights and freedoms. Despite the fact that it is not generally binding, its norms have been reflected in the constitutions of various countries. The norms of the “Universal Declaration of Human Rights” are widely used in the development and organization of national legislation of the RUz to ensure guarantees for qualified medical care. Thus, according to Article 25 of the Universal Declaration of Human Rights: “Everyone has the right to food, clothing, housing, medical care and such social services as are necessary for the health and well-being

of himself and his family".

122. According to the **Constitution of the RUz (2023)**, the following articles state:

- Every person has the right to privacy, personal and family secrets, and protection of his honor and dignity.

  Everyone has the right to privacy of correspondence, telephone conversations, postal, electronicand other messages. Restriction of this right is permitted only in accordance with the law and on the basis of a court decision.

  Everyone has the right to the protection of their personal data, as well as to demand the correction of inaccurate data, the destruction of data collected about them illegally or that no longer has a legal basis.

  Everyone has the right to the inviolability of their home.

  No one may enter a home against the will of the persons living there. Penetration into a home, as well as seizure and inspection thereof, is permitted only in cases and in the manner prescribed by law. A search of a home is permitted only in accordance with the law and on the basis of a court decision. (Article 31).

- Everyone has the right to health protection and qualified medical care.

  Citizens of the RUz have the right to receive a guaranteed volume of medical care in the mannerprescribed by law at the expense of the state.

  The state is taking measures to develop the healthcare system, its state and non-state forms, various types of health insurance, and ensure the sanitary and epidemiological well-being of the population.

  The state creates conditions for the development of physical culture and sports, the formation of a healthy lifestyle among the population. (Article 48).

- The rights of disabled and lonely elderly people, persons with disabilities and other socially vulnerable categories of the population are protected by the state.

The state is taking measures aimed at improving the quality of life of socially vulnerable categories ofthe population, creating conditions for them to fully participate in public and state life and expanding their ability to independently provide for their basic life needs.

The state creates conditions for persons with disabilities to have full access to objects and services in the social, economic and cultural spheres, promotes their employment, education, and ensures the opportunity to freely obtain the information they need. (Article 57).

123. In order to implement this article, a number of regulatory documents were adopted by the competent government bodies. In particular, on August 29, 1996 (and updated in 2023), the **Law of theRUz "On the Protection of Citizens' Health"** was adopted. With the adoption of this law, the guarantee of citizens' rights to qualified medical care was further strengthened.

124. Article 13 of the above Law states that citizens of the RUz have an inalienable right to health care.The state provides citizens with health protection regardless of age, gender, race, nationality, language, attitude to religion, social origin, beliefs, personal and social status. The state also guarantees citizens protection from discrimination, regardless of whether they have any form of disease. Persons guilty ofviolating this provision are liable in the manner prescribed by law.

125. Article 3 of the same Law defines the basic principles of protecting the health of citizens, which are: respect for human rights in the field of health protection; accessibility of medical care for all segments of the population; priority of preventive measures; social protection of citizens in case of lossof health; unity of medical science and practice.

126. Article 24 of this Law defines the fundamental rights of patients and it is within the framework ofthe implementation of these norms that the rights of citizens to medical care are guaranteed.

127. Also, on March 18, 2008 (updated in 2022), the **Presidential Decree "On measures to improve the organizational structure and activities of territorial healthcare institutions"** was adopted. It paid great attention to improving the quality of medical care provided by private medical institutions.

128. As a result of the implementation of measures to implement reforms in the healthcare system in the republic, structures for providing medical care to the population were formed. This includes startingfrom rural medical centers providing health care, district and city medical associations, regional multidisciplinary medical centers, ending with republican high-tech specialized medical centers.

129. In Uzbekistan, where there is a strong social policy, medical care is guaranteed by the Constitutionof the country. Free medical care from the state is provided not only to children and pregnant women, but also to everyone who needs first necessary medical care throughout the republic, including remoterural villages.

130. Today, one of the main tasks is the development of medical care to the population, including emergency medical care, patronage services provided by family clinics, strengthening the health of women, motherhood and childhood, as well as the activities of medical institutions in general, as well as the prevention of crime by official powers, indifference to patients and other issues related to the provision of qualified medical care.

131. In order to prevent and prevent such problems, having studied the foreign experience of leading countries, it is important to develop, using the latest information and communication technologies, a single centralized electronic database of medical records, which will contain information about the medical records of all citizens of the country.

132. To ensure all these tasks, a number of legislative acts have been adopted and are regularly updatedin Uzbekistan, such as:

- Decree of the President of the RUz #PP-4055 "On measures for organizing the activities of theMinistry of Health of the RUz" (2018, amended in 2022);
- Decree of the President of the RUz #PP-4847 "On measures for further improvement of the system of public health administration" (2020, amended in 2023);
- Decree of the President of the RUz #PP-5000 "On measures for the effective organization of digitalization in the field of healthcare" (2021).

133. In the process of improving medical care and developing the medical system as a whole, the introduction of information and communication technologies is an important stage in the sustainable development of the state.

AIIB Environmental and Social Framework (2016, last amended in November 2022)

134. The AIIB's Environmental and Social Framework (ESF) is a system that supports the

Bank and its clients in achieving environmentally and socially sustainable development outcomes. The AIIB's ESF includes an introductory overview, an aspirational Vision Statement, a mandatory Environmental and Social Policy (ESP), accompanied by three mandatory Environmental and Social Standards (ESSs) and an Environmental and Social Exclusion List (ESEL). The three ESSs comprise: ESS 1: Environmental and Social Assessment and Management, ESS 2: LAIR and ESS 3: Indigenous Peoples.

135. The ESF was approved in February 2016 and amended in February 2019. Revisions to the ESF were approved by AIIB's Board of Directors in May 2021 and in November 2022.

136. The gap analysis between AIIB environmental safeguard requirements and national legislation is provided in **Table 13**. The table also presents information on how the identified gap has been harmonized.

Table 13 Gap analysis between AIIB safeguard requirements and Uzbek national environmental legislation

Aspect	Asian Infrastructure Investment Bank	National Regulations	Harmonized Framework
Environmenta lPolicy and Regulations	The ESP comprises mandatory environmental and social requirements for each Project and is accompanied by: Three associated mandatory Environmental and Social Standards (ESSs) setting out requirements applicable to Bank Clients on, respectively, Environmental and Social Assessment and Management; LAIR; and Indigenous Peoples; and An Environmental and Social Exclusion List (ESEL).	Environmental assessment and permitting procedure in Uzbekistan are set out in the following laws and regulations: • Law on Nature Protection (1992); • Law on Environmental Expertise (2000), and • Resolution of Cabinet Ministries (RCM) "On the further improvement of the environmental impact assessment mechanism" No. 541 (2020)	
Screening	The Bank screens and categorizes each Project as early as feasible at the outset of its due diligence assessment of the Project in order to determine the nature and level of the required environmental and social assessment, information disclosure and stakeholder engagement required of the Client for the Project. As part of this process, the Bank also screens the Project to determine which of the ESSs applies and which of the environmental and social instruments are required for the Project. The Bank determines the Project's category on the basis of the Project's component presenting the highest environmental or social risk and potential impacts (including direct, indirect, cumulative and induced impacts, as relevant, in the Project area). The Bank reviews these environmental and social risks and impacts, regardless of the categorization being considered. As an element of the categorization process, the Bank may conduct field-based reviews of the Project to provide for a refined understanding of the environmental and social risks and impacts and to support the Client's preparation of a site-specific approach to	A project category is classified in accordance with Appendix 1 to RCM No. 541. The Appendix provides a list of activities split for 4 categories.	The project is classified as Category B (AIIB classification) and Category III (low risk) (national legislation).

	assessment of these risks and impacts. Categories A, B, C, FI		
Scoping	The scope and depth of the Client's analysis is proportional to the nature and magnitude of the Project's potential environmental and social risks and impacts. The environmental and social assessment applies a mitigation hierarchy to: (a) anticipate and avoid risks and impacts; (b) where avoidance is not feasible, minimize or reduce risks and impacts to acceptable levels; (c) once risks and impacts have been minimized or reduced, mitigate them; and (d) where residual risks or impacts remain, compensate for or offset them, where technically and financially feasible. The Bank requires the Client to make information on the Project available during preparation and implementation, including the environmental and social assessment and ESMP and ESMPF, if applicable. Executing Agency considers potential impacts (direct, indirect and cumulative) and risks on physical, biological, resettlement, socio-economic (including health and safety), and physical cultural resources.	The environmental and social assessment should evaluate: (i) compliance of a proposed project with the environmental requirements, (ii) level of risk related to project implementation on people's health and environment, and (iii) efficiency of developed measures to mitigate identified impacts. Environmental assessment considers the project's potential impacts on physical, biological, socio- economic and cultural resources, including cumulative impacts.	Conduct a process of Environmental and Social Impact Assessment that will consider potential environmental (including labor, health, and safety) risks and project impacts. The EIA will consider natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous people, and physical cultural resources).
Alternatives	Examination of financially and technically feasible alternatives to the project location, design, technology and components, their potential environmental and social impacts Consider "without project" scenario.	For the EIS (national Environmental Impact Assessment), consideration of alternatives is required. Alternatives that may be assessed include alternatives of processing, technical design, location of a facility, architectural and planning options. Another mandatory requirement is consideration of the zero option.	Assessment of alternatives will include different road sections and districts, road construction and reconstruction technologies and "without project" project scenario.

Environmental Assessment Report	The AIIB requires the Client to prepare appropriate environmental and social assessment documents. If the Project includes activities whose details are not yet identified, and thus, whose specific physical location is not known at the time the Project is approved by the Bank, the Bank requires the Client to use an ESMPF. The ESMPF includes an RPF. The Bank requires the Client to prepare the environmental and social assessment report and ESMP for each of the activities during their development, in conformity with the ESMPF. The AIIB requires the Client to undertake an environmental and social assessment that consists of the following elements in varying degrees, depending on the categorization, and reflecting the nature, scale and potential risks and impacts of the Project: (a) description of the Project, including, as applicable, a map of the Project area; (b) policy, legal and administrative framework, including the international and national legal framework applicable to the Project; (c) scoping, including stakeholder identification and consultation plan; (d) analysis of alternatives, including the "without Project" alternative; (e) baseline environmental and social data; (f) evaluation of environmental and social risks and impacts; (g) analysis of risks and impacts related to climate change; (h) public consultation and information disclosure; and (i) development of mitigation, monitoring and management measures and actions in the form of an ESMP or ESMPF or other Bank-approved document. The assessment also identifies the GRMs required for the Project	The RCM No.541 defines activities to be undertaken under EIS preparation. Description of undertaken activities should be included into the PEIS report. The RCM requires the following: (i) assessment of the existing environmental and socio- economic conditions, (ii) project description, (iii) anticipating discharges, emissions, wastes, their impact on environment and disposal methods, (iv) collection, storage and waste disposal (v) review of alternatives, (vi) institutional, technical and technological mitigation measures, (vii) emergency risk assessment, probability of occurrence and emergency response measures, (vii) forecast of changes in the environment after project operation. The complexity of the report depends on the project category.	The ESMPF and ESMPs reports will follow the table of contents proposed in AIIB ESF. PEIS will be prepared separately following the national regulation, but in line with the ESMPF.

Public Consultations	Carry out meaningful consultation with Project-affected people and other stakeholders and facilitate their informed participation in the consultations. Meaningful consultation is an interactive process to provide information and facilitate informed decision- making that: (a) begins early in the preparation stage of the Project to provide accurate information on the proposed Project, minimize misinformation and unsupported expectations, and obtain initial views on the Project; (b) is carried out on an ongoing basis throughout the implementation and life cycle of the Project; (c) is designed so that all relevant parties have a voice in consultation, including national and subnational governments, the private sector, nongovernmental organizations and people affected by the Project, including, as applicable, Indigenous Peoples; (d) provides additional support as needed so that women, elderly, young, disabled, minorities and other vulnerable groups participate; (e) provides timely disclosure of relevant and adequate information, including availability of the Project's GRMs and of the PPM or other Bank-approved IAM, which is understandable and readily accessible to the people affected by the Project and other relevant stakeholders; (f) is undertaken in an atmosphere free of intimidation or coercion; (g) is gender sensitive, inclusive, accessible, responsive and tailored to the needs of vulnerable groups; and (h) enables the consideration of relevant views of people affected by the Project and other concerned stakeholders in decision-making.	Public meetings are mandatory only for the projects under Categories 1 and 2.	Consultations carried out with stakeholders, affected people and NGOs. Questions and concerns raised during public consultations held during FS stage have been considered. All questions and concerns raised during public consultation will be included in ESMPF. Also, signed list of participants, photos from meetings will be attached to this ESMPF.
Public Disclosure	ESMPF will be disclosed on the AIIB's website. The borrower needs to provide relevant environmental information in a timely manner, in an accessible place and in a form and language(s) understandable to affected people and other stakeholders. For illiterate people, other suitable communication methods will be used.	National environmental legislation does not require disclosure of PEIS/EIS.	The Draft ESMPF report (including RPF as Annex) including the Draft Executive summary in sufficient quality translated into English, Uzbek and Karakalpak/Russian (Karakalpak or Russian – to be confirmed) will be disclosed. A final report will be translated into Russian and both documents will be posted on AIA PIU website .The final ESMPF report translated into Russian and

			Uzbek will be sent to the Karakalpak branch of the Ministry of Ecology, Environment Protection and Climate Change (MEEPCC), and administrative units in the project area.
Monitoring and Reporting	The AIIB requires the Client to: (a) implement the Project in compliance with the ESMP, ESMPF, RPF or other Bank-approved documentation, and any other environmental and social obligations in the Legal Agreements for the Project; and (b) prepare and furnish to the Bank periodic monitoring reports on the Client's performance under the Project relating to environmental and social risks and impacts. This may include information on health and safety issues as well as implementation phase consultations.	Monitoring of mitigation measures developed under ESMPF is a responsibility of design consultant developed Feasibility Study (design supervision). External monitoring could be conducted by representatives of the MEEPCC. There are no requirements to submit report during construction phase. The report on waste generation will have to be submitted by the Implementing Agency to MEEPCC.	Environmental and Social Monitoring Plans (ESMP) will be developed under this ESMPF to monitor implementation of ESMP requirements. The ESMPF also includes requirements on preparation of periodic monitoring reports and their submission to AIIB for further disclosure on AIIB and PIU AIA websites.
Grievance Redress Mechanism	The AIIB requires the Client to establish, in accordance with the ESP and applicable ESSs, a suitable Project-level GRM to receive and facilitate resolution of the concerns and 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 GRM is scaled to the risks and impacts of the Project. The AIIB also requires the Client (including an FI Client) to establish or maintain a GRM for contracted Project workers under the Project to address workplace concerns, and reflect this in the tender documents for contracted Project workers.	A grievance redress procedure in Uzbekistan is also regulated by the national legislation, by the Law "On applications by individuals and legal entities" (new edition in accordance with the law, # ZRU-445 On amendments and additions to the Law of the RUz "On applications of individuals and legal entities" dated 11.09.2017 and amended in 11.03.2020) and others.	The GRM for this Project will be developed in accordance with AIIB and national requirements.

Table 13a Gap analysis between International Best Practice and Uzbek national legislation related on Road Safety and Infrastructure Design

Aspect	International Best Practice	National Regulations	Comments
Geometric Design	AASHTO Roadside Design Guide https://highways.dot.gov/safety/rwd/provide-safe-recovery/clear-zones/clear-zones Guide to Road Design Part 6: Roadside Design, Safety and Barriers https://austroads.gov.au/publications/road-design/agrd06	ShNQ 2.10.01-23 "Determining the dimensions of land areas for the construction of flat and linear structures" https://lex.uz/docs/6872552 Previous and current Design norms and rules No. 2.05.02-23 “Motorways. Design requirements” adopted by the Order of the Minister of Construction and Housing and Communal Services of the Republic of Uzbekistan dated August 23, 2024 No. 01/2-61 https://lex.uz/docs/7205692 Lack of Design regulations on design of cross sections in rural and built-up areas	Uzbek legislation does not have proper Road side dimensions which shall consider space for pedestrians, bicyclists and etc., recoverable slope and clean zone distance along roads when run off crashes can happen. AASHTO considers embankment slopes flatter than 1V:4H as recoverable. This is applicable especially for high level embankments. Australian Guide to Road Design Part 6: Roadside Design, Safety and Barriers considers Generally, paved shoulder width requirements meet International best practice. But, in fact designers use only up to 1 meter width for inner and outer paved shoulders. Lack of Design regulations on design of cross sections in rural and built-up areas leads to using improper cross section elements, lack of infrastructure for pedestrians and bicyclists. Dust from materials used for soft shoulders is penetrating to houses and business and social infrastructure located nearby.

International Legislation

World Bank Group's Environment, Health and Safety Guidelines

137. In this project, the following EHS Guidelines have been considered:

- *General EHS Guidelines (2007)* – (i) provides prevention and control measures for each sourceof pollution applicable to this type of industry Environmental Monitoring Programs; and (ii) provides occupational health and safety sources of threats, prevention and control measures andmonitoring;
- *EHS Guidelines for Water and Sanitation (2007)* 16- includes information relevant to the operation and maintenance of (i) potable water treatment and distribution systems, and (ii) collection of sewage in centralized systems (such as piped sewer collection networks) or decentralized systems (such as septic tanks subsequently serviced by pump trucks) and treatment of collected sewage at centralized facilities;
- *A guidance Note by International Finance Corporation (IFC) and the EBRD: Workers' accommodation: processes and standards.17*

. International Agreements

138. The Government of Uzbekistan has ratified the following international conventions relevant to this ESMPF. These are shown in Table 14 below. Fulfillment of these commitments contributes to environmental sustainability, promotes external funding for stabilization and prevention of degradation of natural resources and cultural heritage, and enhances the country's capacity to use its natural and cultural resources as a basis for poverty reduction and socio-economic development.

Table 14 Participation of Uzbekistan in International Conventions Relevant to the Project

International Conventionsand Treaties	**Date of Ratificatio n**	**Date of coming into force for Uzbekistan**	**Main Objectives**
United Nations Framework Convention on Climate Change	20 June 1993 (acceptance)	21 March 1994	Stabilizing greenhouse gas concentrations at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system.
Kyoto Protocol	20 August 1999	16 February 2005	Setting internationally binding emission reduction targets.
United Nations Convention Combat Desertification	31 August 1995	29 January 1996	Reversing and preventing desertification and land degradation in affected areas to support poverty reduction and environment sustainability.

16 World Bank Group, Environmental, Health, and Safety Guidelines for Water and Sanitation, 2007, Washington, USA.

17 <https://www.ifc.org/wps/wcm/connect/0d8cb86a-9120-4e37-98f7-cfb1a941f235/Final%2B-%2BWater%2Band%2BSanitation.pdf?MOD=AJPERES&CVID=nPtk0wW> in English.
<https://www.ifc.org/wps/wcm/connect/eedfad60-8972-494c-8f95-34ec51291b5f/Water_and_Sanitation%2B-%2BRussian%2B-%2BFinal_.pdf?MOD=AJPERES&CVID=nPtk1Ek&ContentCache=NONE&CACHE=NONE> in Russian.

United Nations Convention on Biological Diversity	6 May 1995 (accession)	17 October 1995	Conservation of biodiversity, sustainable use of its components, and equitable sharing of the benefits.
Convention on the Conservation of the World Cultural and Natural Habitats	22 December 1995	15 June 1996	Protection of natural and cultural heritage.
Convention on International Trade in Endangered Species of Wild Fauna and Flora	25 April 1997 (accession)	8 October 1997	Ensuring that international trade does not threaten wild animals and plants.
Convention on the Conservation of Migratory Species	1 May 1998 (accession)	1 September 1998	Global platform for the conservation and sustainable use of migratory animals and their habitats.
Ramsar Convention on Wetlands of International Importance Especially as Wildlife Habitat	30 August 2001 (accession)	8 February 2002	Conservation and wise use of all wetlands through local and national actions and international cooperation to achieve sustainable development.
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal	22 December 1995 (accession)	7 May 1996	Regulation, reduction, and restriction of hazardous wastes transboundary movement.
Stockholm Convention on Persistent Organic Pollutants	22 May 2001	8 May 2019	Convention is a global treaty to protect human health and the environment from chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of humans and wildlife, and have harmful impacts on human health or on the environment.

International Labor Organization

153. Uzbekistan acknowledges the issue of child and forced labor in the country18. It is now implementing the Decent Work Country Program that has been established as the main vehicle for delivery of International Labor Organization support to the country in implementing its standards.

154. **ILO core labor standards.** The RUz ratified 18 ILO conventions and 1 Protocol including key labor standards, such as freedom of association, prohibition of child labor, prohibition of discrimination, and prohibition of forced labor. In total all 8 Fundamental and 4 Governance (Priority) Conventions were ratified, as well as 6 of 178 Technical Conventions were ratified. The list of conventions adopted by the RUz is provided in **Table 15** below (additional details are provided in Annex III).19

Table 15 ILO conventions adopted by RUz

Convention	**Date**	**Status**
Fundamental		

18 Decree of the Cabinet of Ministers No.349 of 10.05.2018 No.349 "On Additional Measures to Eradicate Forced Labor in Uzbekistan."

19 https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11200:0::NO::P11200_COUNTRY_ID:103538

C029 - Forced Labour Convention, 1930 (No. 29) Protocol of 2014 to the Forced Labour Convention, 1930 ratified on 16Sep 2019 (In Force)	13 Jul 1992	In Force
C087 - Freedom of Association and Protection of the Right to OrganiseConvention, 1948 (No. 87)	12 Dec 2016	In Force
C098 - Right to Organise and Collective Bargaining Convention, 1949(No. 98)	13 Jul 1992	In Force
C100 - Equal Remuneration Convention, 1951 (No. 100)	13 Jul 1992	In Force
C105 - Abolition of Forced Labour Convention, 1957 (No. 105)	15 Dec 1997	In Force
C111 - Discrimination (Employment and Occupation) Convention, 1958 (No. 111)	13 Jul 1992	In Force
C138 - Minimum Age Convention, 1973 (No. 138)Minimum age specified: 15 years	06 Mar 2009	In Force
C182 - Worst Forms of Child Labour Convention, 1999 (No. 182)	24 Jun 2008	In Force
Governance (Priority)		
C081 - Labour Inspection Convention, 1947 (No. 81)	19 Nov 2019	In Force
C122 - Employment Policy Convention, 1964 (No. 122)	13 Jul 1992	In Force
C129 - Labour Inspection (Agriculture) Convention, 1969 (No. 129)	19 Nov 2019	In Force
C144 - Tripartite Consultation (International Labour Standards) Convention, 1976 (No. 144)	13 Aug 2019	In Force
Technical		
C047 - Forty-Hour Week Convention, 1935 (No. 47)	13 Jul 1992	In Force
C052 - Holidays with Pay Convention, 1936 (No. 52)	13 Jul 1992	In Force
C103 - Maternity Protection Convention (Revised), 1952 (No. 103)	13 Jul 1992	In Force
C135 - Workers' Representatives Convention, 1971 (No. 135)	15 Dec 1997	In Force
C154 - Collective Bargaining Convention, 1981 (No. 154)	15 Dec 1997	In Force
C187 - Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)	14 Sep 2021	Not in force

DESCRIPTION OF EXISTING SITUATION AND PLANNING WORKS

Existing situation

155. The project includes investments in reconstruction the local roads infrastructure of cities and districts of the RK and Khorezm region. The intervention in local roads in 11 districts of RK and 9 in Khorezm region, project includes pavement reconstruction, bridge repair and construction, drainage enhancements, the installation of road safety measures such as additional signs, barriers, and pedestrian crossings, and the provision of bus stops. Where necessary, sidewalks will be added to enhance pedestrian safety.
156. Crucially, road reconstruction will occur within the existing right-of-way, eliminating the necessity for land acquisition and resettlement. Furthermore, environmental impacts are expected to be minor, mainly linked to construction activities.

157. The Project is expected to generate benefits in Karakalpakstan and Khorezm region by improving the condition of regional roads to make them efficient and safer to use. Also Project will contribute to improved connectivity between communities by rehabilitating selected local roads, thereby providing better access to markets, schools, healthcare, and social services for local residents. This initiative will significantly contribute to the development of an efficient and secure transportation network within the regions.

158. A survey of local roads during FS confirmed their unsatisfactory condition. Checking the actual condition of the roads showed that there is damage to the road surface along the highway. The destruction of asphalt concrete occurred under the influence of heavy trucks, precipitation in the form of rain and snow. The reasons for the unsatisfactory condition can also be attributed to the lack of sufficient technical capabilities to maintain the road in good condition. The existing roads under repair for 516 km have parameters of the III; IV; V technical category. The project also provides for the installation of LC-6 cuvette trays and 1.5 m wide sidewalks in populated areas.

155. The primary beneficiaries of this project are the citizens living in the project area Kanlykul, Daukhara Dfh-Borshetov Kegeyli, Takhtakupyr, Shumanai, Amurdarya, Beruniy, Nukus, Karauzak, Kungrad, Muynak districts in Karakalpakstan and and Bagat, Gurlan,Koshkupi, Urgench, Khiva, Khazarasp, Shavat, Yangiarik, Yangibazar districts in Khorezm region (both male and female inhabitants), who will directly benefit from improvement of local road conditions through the construction and reconstruction works.

156. The location of project districts is shown in **Figure 1, 2.**

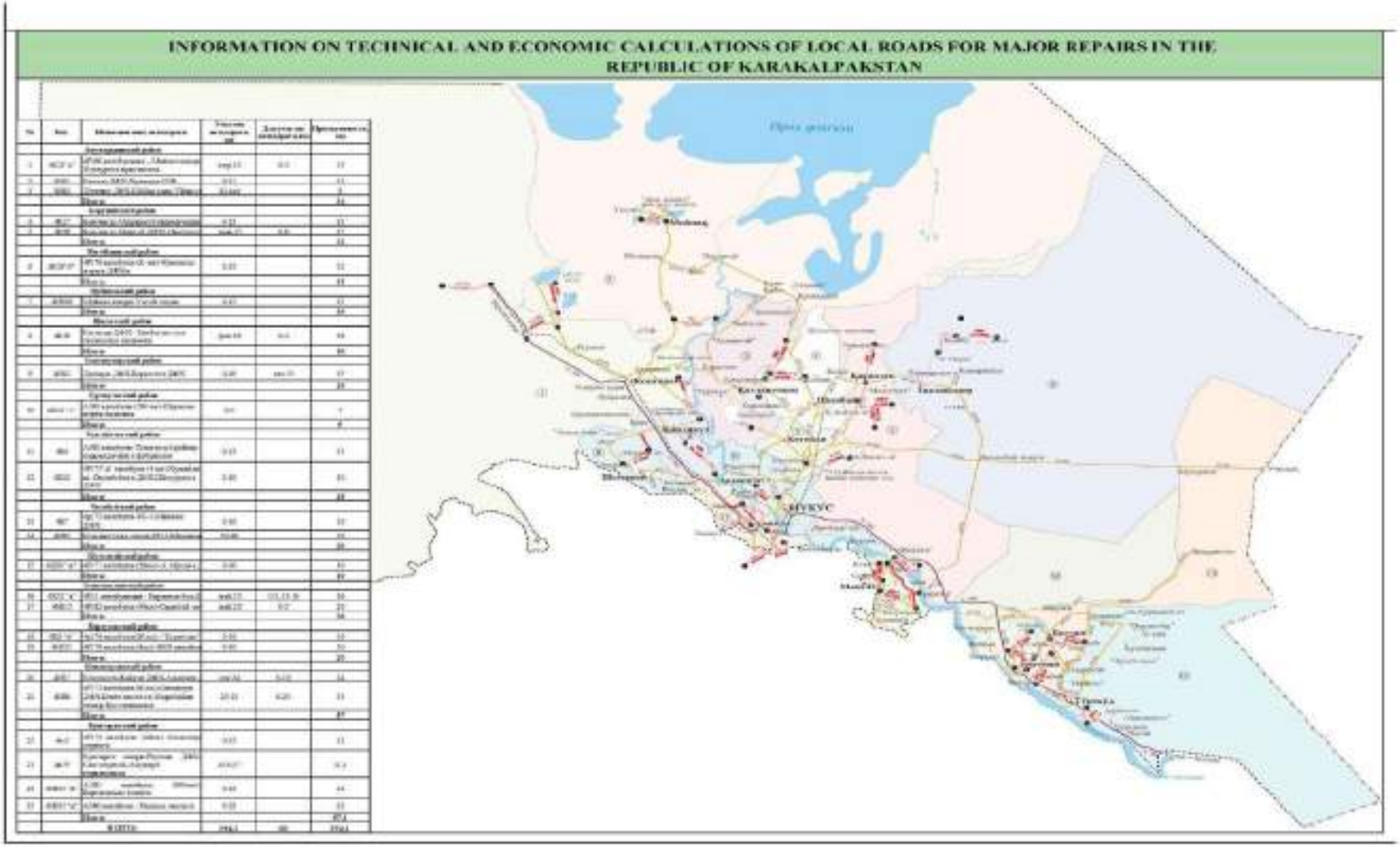

Figure 1 Location of Project Districts in Karakalpakstan

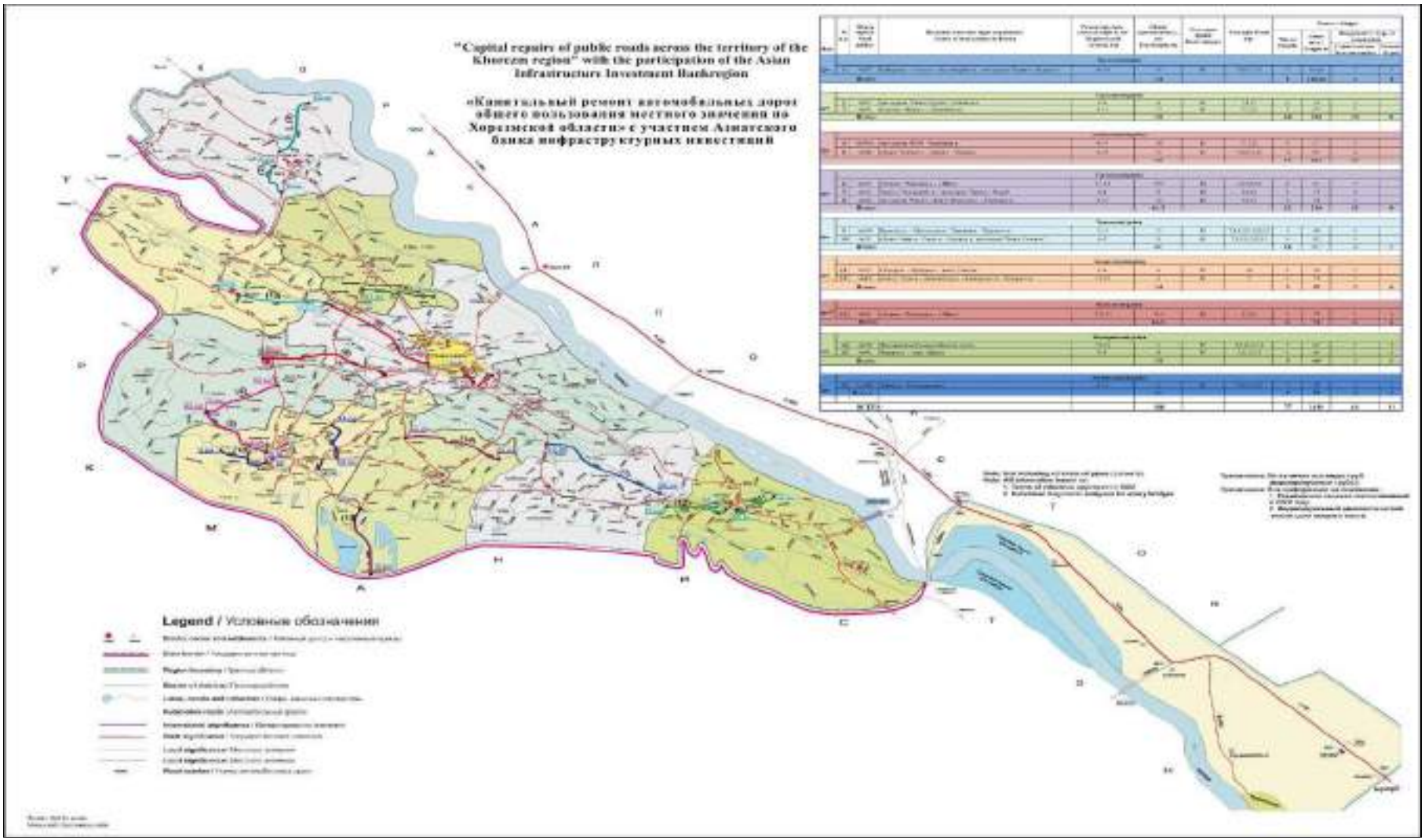

Figure 2 Location of Project Districts in Khorezm region

Road infrastructure in the project area

155. Local roads suffer from backlogs in maintenance and rehabilitation, with many roads in poor condition. Much of the road deterioration is caused by aging infrastructure, which requires structural and safety upgrades. The poor condition of roads significantly impacts travel times, fuel consumption, vehicle damage, and overall transport costs.

156. Among the regions of Uzbekistan, Karakalpakstan and Khorezm have above average rates of local roads that require repair, which demonstrates the urgency of local road reconstruction. About 140,000 people in 134 settlements in Karakalpakstan and 191,091 people in 67 settlements in Khorezm suffer from poor local roads access.

Table 16 Estimated Number of Rural Settlements and People with Poor Local Roads Access**20**

Region	% Needs Repairs	Settlements	People
Karakalpakstan	35%	134	139,691
Khorezm	41%	67	191,091
Average in Uzbekistan	31%		

Characteristics of the existing condition of the project local roads in the Republic of Karakalpakstan

Examinationof the actual condition of the roads showed that there is damage to the road surface along the route. The destruction of asphalt concrete occurred under the impact of heavy-duty vehicles and precipitation in the form of rain and snow.

The existing roads under repair, over a length of 354.1 km, have parameters of III; IV; V technical categories

Amudarya district

20 Rural Road Strategy 2035. March 2023

4K21A "4R160 AUTOYULIDAN-MANGIT SHAKHRI-JUMURTOV PRISTANIGA ROAD 0-15 KM 0-15"

Road category - IV. Length of the road - 15.0 km.Width of existing roadway part - 2x3.0 m, width of fortification roadsides - 2x1.5 m. Width of existing road foundation - 10.0 m.

The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 3 cm to 14 cm.

4N62 Dustlik MAC - Shiyik Kala-Uychi village km 2-10

Road category – IV. Length of the road - 8,0 km. Width of existing roadway part - 2x3.0 m, width of fortification roadsides - 2x1.5 m. Width of existing road foundation - 10.0m.

Existing asphalt concrete coating ranges from 4 cm to 8 cm and consists of petroleum minerals mixture with thickness ranging from 3 cm to 10 cm.

Beruniy district

4K51"A" "4K51 AVTOYULIDAN-KIRKIZOBOD DFHGA" KM 0-16

Road category - III. Length of the road - 16,0 km. Width of existing roadway part - 2x3.5 m, width of fortification roadsides - 2x2.0 m. Width of existing road foundation - 12.0 m.

The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 5 cm to 15 cm.

4K28 Beruniy - Navoi MAC - Makhtumkuli DFH km 0-17

Road category - IV. Length of the road - 17.0 km.Width of existing roadway part - 2x3.0 m, width of fortification roadsides - 2x1.5 m. Width of the existing road foundation - 10.0m.

The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 3 cm to 14 cm.

<u>Kegeylinsky district</u>

4K34"b" 4R176 highway(31 km) - Kuvonish-Zharma MAC km 0-12

Road category – III and IV. Length of the road - 7.025 km of category III and 4.975 km of category IV. Width of existing roadway part - 2x3.5 m or 2x3.0 m; width of fortification roadsides - 2x1.5 or 2x2.0 m.Width of existing road foundation is 10.0-12.0 m.

The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 2 cm to 19 cm.

Nukus district

4K18 Kattagar MAC- Kreituzak water treatment plant km 2-16

Road category - IV. Length of the road -16.0 km. Width existing roadway part - 2x3.0 m, width of fortification roadsides - 2x1.5 m. Width of existing road foundation - 10.0m.
The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 4 cm to 15 cm.

Takhtakupir district

4N42 Dauhara MAC- Borshetov MAC km 0-15

Road category - IV. Length of the road - 15.0 km. Width of existing roadway part - 2x3.0 m, width of fortification roadsides - 2x1.5 m. Width of existing road foundation - 10.0m.
The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 5 cm to 16 cm.

Karauzyak district

4K3 "b" 4p176 highway (89 km) -" Corausac " DFH km 0-10

Road category – III. Length of the road - 10,008 km. Width of existing roadway part - 2x3.5 m, width of fortification roadsides - 2x2.0 m. Width of existing road foundation - 12.0m.
The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 5 cm to 25 cm.

Shumanay district

4N20 "zh" 4P177 highway (28 km) - A. Musaev DFH km 0-10

Road category – IV. Length of the road 10,735 km. Width of existing roadway part - 2x3.0 m, width of fortification roadsides - 2x1.5 m. Width of existing road foundation - 10.0m.
The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 3 cm to 11 cm.

Konlikul district

4N87 Konlicul-Zhaihun MAC- Ajiniyaz DFH km 0-24

Road category - IV. Length of the road 24.0 km. Width of existing roadway part - 2x3.0 m, width of fortification roadsides - 2x1.5 m. Width of existing road foundation - 10.0m.

The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 3 cm to 11 cm.

4N88 4R173 highway (61km) - Oltinkul MAC- Bekyop pump st. - Korabayli Railroad stations km 23-33

Road category - IV. Length of the road - 33.0 km. Width of existing roadway part - 2x3.0 m, width of fortification roadsides - 2x1.5 m. Width of existing road foundation - 10.0m.

The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 3 cm to 17 cm.

<u>Kungirat district</u>

4N79 Kungirot Shahri-Raushan MAC- Saksovoulsoy-Amudaryo reserve km 45.9-57

Road category – V. Length of the road - 11.1 km. Width of existing roadway part - 4.5 m, width of fortification roadsides - 2x1.75 m. Width of existing road foundation - 8.0 m.

The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 6 cm to 15 cm.

4N105 "v" AZ80 highway (961km) - Barsakelmes mine km 0-12

Road category – V. Length of the road - 12,355 km. Width of existing roadway part - 4.5 m, width of fortification roadsides - 2x1.75 m. Width of existing road foundation - 8.0m.

The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 4 cm to 13 cm.

4N105 "d" AZ80 highway - Raushan village km 0-22

Road category – V. Length of the road - 21,397 km. Width of existing roadway part - 4.5 m, width of fortification roadsides - 2x1.75 m. Width of existing road foundation - 8.0m.

The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 4 cm to 13 cm.

Muynak district

4N109 Muynak Shahri-Uchsoy villages km 0-15

Road category - IV. Length of the road - 14.0 km. Width of existing roadway part - 2x3.0 m, width of fortifications roadsides - 2x1.5 m. Width of existing road foundation - 10.0m.

The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 4 cm to 17 cm.

All sections of the existing roadway of the designed roads have:

a) longitudinal, transverse, and network cracks;
b) rutting;
C) subsidence;
d) waves;
e) breaks;
f) peeling
g)scaling
h) potholes;i) shifts.

List of roads in the Republic of Karakalpakstan is given in Table No. 17.

Table 17 List of roads in the Republic of Karakalpakstan

No.	Road Code & Section Name	Length (km)
	Amu Darya District	
1	4K21A “4R160 AUTOYULIDAN-MANGIT SHAKHRI-JUMURTOV PRISTANIGA ROAD 0-15 KM 0-15”	15.0
2	4N62 “DUSTLIK DFH-SHIYIK KALA-UYCHI OVULI KM2-10”	8.0
	Beruni District	
3	4K51“A” “4K51 AVTOYULIDAN-KIRKIZOBOD DFHGA” KM 0-16	16.0
4	4K28 “BERUNI SH.-NAVOI DFH-MAKHTUMKULI DFH KM0-17”	17.0
5	4N115 “4R182 AVTOYULI (40KM)-SARIBIY OVULI KM0-20”	20.0
6	4K27 “BERUNI SH.-OKSHAKOL BURDOKICHILIK BAZASI KM0-15” ROAD	15.0
7	4K32G “A-380 AVTOYULI (589 KM)-SHURAKHON OIL BASE KM0-5”	5.0
	Kegeylinsky District	
8	4K7 “4R175 AVTOYULI-KS-1-MAIZHAP DFH” MOTOR ROAD ON THE 0-10KM SECTION	10.0
9	4K34“B” 4R176 AVTOYULI ROAD (31KM)-KUVONISH-ZHARMA DFH KM0-12”	12.0
10	4H85 KOZONKETGKAN OVULI-KS-1-SHAHAMAN OVULI KM30-40	10.0
	Nuku District	
11	4K42 “4R171”D” AVTOYULI (4KM)-KHUZHAILI SH.-OKHUNGBOBOEV DFH-SHOMURATOV DFH” KM 0-10	10.0
12	4K18 “KATTAGAR DFH-KREITUZAK SUV TAKSIMLAŞ INŠOOTI” KM 2-16”	16.0
	Takhtakupir District	
13	4K3 “B” “4R176 AVTOYULI (89KM)-”KORAUZAK” DFH CA KM 0-10”	10.0
	Daukhara Dfh-Borshetov	
14	4N42 DAUHARA DFH-BORSHETOV DFH KM0-15 MOTOR ROAD	15.0
	Karauzyaksky District	
15	4N121 “4R179 AVTOYULI (4KM)- 4H19 AVTOYULI KM 0-10”	10.0
	Shumanay District	
16	4N20”Zh” “4R177 AV-TOYULI (28KM)-A.MUSAYEV DFS AT 0-10	10.0
	Konlikul District	
17	4H87 “4KONLIKUL-JAYKHUN DFH-AJINIYAZ DFH KM 0-24”	24.0
18	4N88 “4R173 AVTOYULI (61KM)-OLTINKUL DFH-BEKEP PUMP ST.-KORABAYLI TEMIR YUL STANTSIYASI KM 0-33”	33.0
	Kungirat District	
19	4N105 “D” “A-380 AVTOYULI-RAUSHAN OVULIGA KM 0-22”	22.0
20	4H79 “KUNGIROT SHAHRI-RAUSHAN DFH-SAKSOVULSOY-AMUDARE KURIKHONASI ROAD KM 45.5-57”	11.1
21	4N105 “V” “A-380 AVTOYULI (961KM)-BARSAKERMES BOOK KM0-12”	12.0
	Muynak District	
22	4N109 “MUYNAK SHAKHRI-UCHSOY OVULI KM 0-15”	15.0
23	4K2 “4R173 AVTOYULI (26KM) KIZILZHAR OVULIGA KM0-12” ROAD	12.0
	TOTAL THE REPUBLIC OFKARAKALPAKSTAN	**328.1**

Sensitive recipients, environmental and social conditions in RoK.

Amudarya district

4N62 Dustlik MAC - Shiyik Kala-Uychi village km 2-10

Highway 4 N62 has the status of local importance and runs through populated areas and along the border with Turkmenistan. From the beginning of the road section at 2 km, on the right side at 500 meters there are agricultural fields, after which household plots and households are located up to about 5 km. On the left side of the road, from the beginning of the road section to the 3.8km mark, there are agricultural fields, household plots and several households. From the 3.8 mark, for about 1 km on the left side of the road there is a fence with barbed wire of the border with Turkmenistan, at the end of which households are located up to about 5 km. On the left side of the road from the mark of about 5 km at 300 meters there are agricultural fields, at the end of which there are household plots and households located to the end of the object, between which a school is located at about 6 km. A large number of trees grow along the road.

4K21»a»4R160 Highway - Mangit Shakhri-Zhumurtov Highway km 0-15

The 4K21a highway has the status of local significance and originates from the city of Mangit and leads through settlements to the bank of the Amu Darya River. On the left side from the beginning of the road to the mark of about 2 km, at 500 meters there are households, among which there are business entities providing services, then along a length of about 200 meters there are orchards and agricultural plots, at the end of which a business entity is located at 200 meters. After the business entity, the territory of the gas station is located, at the end of which there are household plots and household facilities, including grocery stores and a catering point, along a length of about 1 km. On the right side of the road from the beginning of the road to the mark of about 2.5km, 500 meters away is the territory of the college, at the end of which there are several business entities, including a bank branch. On the next 2km there are homesteads and households, among which there are grocery stores and a kindergarten. There is a circuit between the households at about 1km, with a length of about 200 meters. From about 2km to about 10km, a canal runs along the right side of the road, followed by residential buildings from about 2.5km to 3.5km, agricultural fields are located, at the end of which homesteads and households are located up to about 5km. At the end of the households, there is a cemetery behind the canal from about 5 km to 5.5 km, at the end of which there are sowing fields up to 11 km, between which a school is located at about 8.5 km. On the left side of the road from the mark of about 2 km to the mark of 3.5 km there are cultivated fields, at the end of which, to the mark of about 6 km, there are household plots and households, between which a kindergarten is located at about 4.5 km. The school is located at about 14.5km.On the right side of the road, from about 11km to 13km, there are households and homesteads, at the end of which there are sown fields up to about 14.5km. After the cultivated fields, households are located to the end of the facility, among which there are grocery stores. There are bridges at about 700 meters, 2km and 13km marks. There are many trees along the road.

Beruniy district

4K27 "BERUNI SH.-OKSHAKOL BURDOKICHILIK BAZASI KM0-15" ROAD

The highway 4K247 has the status of local significance. It originates from the regional center and runs through populated areas. From the beginning of the road, there are households on both sides, which on the left side are located up to about 1.2km, on the right side up to 3 km, among which there are business entities such as construction, hardware and grocery stores, as well as small production workshops. On the left side, at about 500m, there is a kindergarten. On the right side of the road, at about 1.5 km, there is a school and at about 1.9 km, about 300 meters long, there are cultivated fields. On the right side of the road from the 3km mark to about 5km mark there are sowing and fruit fields, among which households are located at about 4km with a length of about 100 meters, at 4.5 km there is a school, after which the territory of the business entity is located - a catering point. From the 5km mark to the approximately 8.5km mark, there are households on both sides of the road, among which there are business entities, grocery and hardware stores, homesteads and fruit fields. At about 5.5km on the right side of the road there is a school, at about 7.5km on the left side of the road there is a kindergarten, on the right side of the road there is a school. From the 8.5km mark to the 9km mark, there are sown fields on both sides. From the 9km mark to the approximately 10km mark, there are homesteads and households on both sides of the road, among which there are grocery stores. Gas utilities run along the road and gas distribution points are located. There are bridges at the 1km, 2km, 4km, 7.4km, 8.7km marks, along some there are gas utilities and water supply. There are many trees growing along the road in residential areas and cultivated fields.

4K28 “BERUNI SH.-NAVOI DFH-MAKHTUMKULI DFH KM0-17”

The 4K28 highway has the status of local importance. It originates from the regional center and runs through populated areas. From the beginning of the road to the 2.5km mark on the left side and to the approximately 3 km mark on the right side, there are households on both sides, among which there are business entities providing services, construction, hardware and grocery stores, as well as catering outlets. On the right side, about 200 meters from the beginning, there is a kindergarten and 600 meters from the beginning there is a fire station. On the left side, at about 1km, there is a school, at about 2km there is a kindergarten. On the left side of the road from the 2.5km mark to about 5 km mark, at 800 meters there are agricultural fields, at the end of which there are homesteads and households. On the right side of the road from the 3km mark to the approximately 5km mark there are homesteads and households, among which there are grocery stores, business entities – a catering point and an event room. The school and the administration department are located at about 4km. From the 5km mark to the 7.5km mark on the left side of the road there are 200 meters of cultivated fields, then 200 meters of private plots with grocery stores, at the end of which there are cultivated fields. On the right side of the road from the 5km mark to the approximately 8.5km mark, 500 meters are sown fields, at the end of which there is a grocery store, then 700 meters are homesteads and households, after which there are sown fields. The college is located at about 8 km. On the left side of the road, from the 7.5km mark to the approximately 9.5 km mark, there are household plots and households at 700 meters, then cultivated fields, at the end of which there is a grocery store. From the 9.5km mark to the approximately 10.5km mark, there are homesteads and households, among

which there is a grocery store. At the end of the residential area, an orchard is located 200 meters away. On the right side of the road from the 8.5km mark to the 10.5km mark there are homesteads and households, among which there is a catering point and grocery stores. At about 10.5km there is a branch from the main road for about 1 km, leading to a connection with the 4K27 highway. Homesteads and households are located on both sides of this branch. From the 10.5km mark along the main road and to the end of the object on the left side of the road there are homesteads and households, among which there are grocery and hardware stores. A polyclinic and pharmacies are located at about 12.5 km. On the right side of the road from the 10.5km mark to the end of the object there are homesteads and households, among which there are hardware and grocery stores. In between the households there are 3 plots of cultivated fields, 200 to 500 meters long along the road, and 1 fruit field. At the end of the facility, a kindergarten is located among the households. At the marks of 1km, 3km, 6.3km, 7.3km, 8.4km, 8.5km, 10.4km, 12.3km, 14.5km there are bridges along which communications run.

Kegeylinsky district

4K34"B" 4R176 AVTOYULI ROAD (31KM)-KUVONISH-ZHARMA DFH KM0-12"

The 4K34b highway has the status of local importance. It connects settlements and farm fields with the main road. From the beginning of the road on the right side to the mark of about 1 km there are homesteads and households, on the left side, up to the 1km mark at 500 meters, there are agricultural fields, behind which there are homesteads and households. From the 1km mark to the approximately 3km mark, there are agricultural fields on the left side. On the right side, up to the 3km mark, 1.5km along the road there are agricultural fields, 500 meters of household plots and households. From the 3km mark, on the right side to the end of the object there are agricultural fields and homesteads. On the left side of the road from the 3km mark at 500 meters there are homestead plots and households, at the end of which agricultural fields and homestead plots are located to the end of the object. There are several households at about 5.5km on the left side of the road. Bridges are located at 500 meters, 3km, 4.2km, 6km, 6.7km. At the 2.4km mark, the road intersects with the railway. Gas utilities periodically run along the road and many trees grow.

Nukus district

4K18 Kattagar MAC- Kreituzak water treatment plant km 2-16

The 4K18 highway has the status of local importance. It runs through populated areas and leads to the Kreituzak water distribution facility. From the beginning, on both sides of the road to about 1.5km mark, there are homesteads and households, among which there are grocery stores. At the end of the residential area, agricultural fields are located on both sides of the road up to about 5.5 km, at the end of which there is a fuel warehouse on the right side. At the end of the agricultural fields, on the right side, up to about 7 km, there are homesteads and households, at the end of which, up to about 10.5 km, there are agricultural fields and homesteads. On the left side, at the end of the fields, up to about 6.5 km, there are homesteads and households, among which there is a kindergarten and a school. At the end of the residential

area, agricultural fields and private plots are located up to about 10.5 km. There is a kindergarten located at about 8km among the fields. At the 10.5km mark, approximately 500 meters along the road, there are several homesteads and households, at the end of which agricultural fields are located on both sides of the road to the end of the object. From the mark of approximately 12.5km to the end of the object, a canal flows on the left side between the fields and the road. Gas utilities periodically run along the road. At 800m, 1.5km, 1.6km, 2.3km, 5.3km, 7.8km, 9.6km, 10.2km, 11.1km, 11.2km, 12.2km there are bridges along which gas and water supply communications run. There are many trees along the road.

Takhtakupir district

4N42 Dauhara MAC- Borshetov MAC km 0-15

The 4H42 highway has the status of local importance and leads to settlements, passing through the fields of farms. From the beginning to the mark of approximately 11.5 km on both sides of the road there are agricultural fields, homesteads. The households on this segment are located far from the road. There is a school located at about 5km on the right side of the road. Starting from the mark of about 6km on the left side with a distance of about 1km there are 6 water reservoirs. At about 9km on the left side of the road there is a helipad. From the 11.5km mark to the approximately 14.5km mark, there are homesteads and several households on both sides of the road. At the end of the residential area to the end of the facility, there is a desert area on both sides of the road. Gas utilities periodically run along the road. Bridges are located at 200m, 1.3km, 4.1km, 5.7km, 9.2km, along which gas and water supply communications run. The trees along the road grow in a residential area.

Karauzyak district

4K3 "b" 4p176 highway (89 km) -" Corausac " DFH km 0-10

Highway 4 K3b has the status of local importance. It originates from 89 km of highway 4P176 and leads to the settlement "Karauzyak". The road starts in the district center. From the beginning of the road to about 1.5km mark, there are households on both sides, among which there are business entities providing services, catering outlets and government buildings. At the end of the residential area on the left side of the road there is a kindergarten, on the right side of the road there is a school. From the 1.5km mark on both sides along the road, to the 3km mark on the right side and to the 7km mark, canals flow. From the 1.5km mark to the end of the object on both sides of the road, behind the canal and at the end of the canal along the road there are agricultural fields and homesteads. Gas utilities run along the road along the entire length of the facility. There are many trees growing along the road, mainly in residential areas and in private plots.

Shumanay district

4N20 "zh" 4P177 highway (28 km) - A. Musaev DFH km 0-10

The 4H20J highway has the status of local importance. It originates from 28 km of highway 4P177 and passing through a small settlement leads to the fields of Dehkan and farms. From the beginning of the road to about 1 km mark, there are homestead plots on both sides, some fences are located on

the side of the road and households among which there is a grocery store and a business entity providing services. At the end of the residential area on both sides of the road, up to about 4.5km along the road, small channels flow, behind which agricultural fields are located to the end of the object. From the beginning of the facility, gas utilities run along the road. There is a bridge at the 5.8km mark. There are many trees growing along the road, mainly in the residential area.

Konlikul district

4N87 Konlicul-Zhaihun MAC- Ajiniyaz DFH km 0-24

Highway 4H87 has the status of local importance. This road runs between the agricultural fields of farms and dehkan farms. There are no households along the roads. From the beginning of the road on the left side, at a distance of about 15 meters from the road, there is a water supply facility and in the vicinity of the road on this section there is a water supply communication. There are sown fields on both sides of the road from the beginning to about 12km mark. The remaining 12km on both sides of the road is a desert area. There are several cultivated fields at about 14km and 19km. Bridges are located at 2.4 km, 3.4 km, 11.8 km, 16.5 km. There are trees along the road.

4N88 4R173 highway (61km) - Oltinkul MAC- Bekyop pump st. - Korabayli Railroad stations km 23-33

Highway 4H88 has the status of local importance. It originates in the district center and runs through agricultural fields of farms and dehkan farms. From the beginning of the road to the mark of about 5 km, the road runs in the district center, on both sides there are manufacturing factories, businesses of various kinds, grocery and hardware stores, a college, a kindergarten. The distance from the road between these objects is from 10 to 30 meters. From the 5km mark to the approximately 9.5km mark, there are agricultural fields on both sides of the road. About the 9.5km mark, at a distance of approximately 500 meters, there are homesteads and households on both sides. From the 10km mark on the left side to the 15km mark and on the right side, to the 16km mark, there are agricultural fields. From the 15km mark on the left to about 17.5km mark and from the 16km mark on the right to about 17km mark, homesteads and households are located on both sides of the road. At the end of the households, small canals flow along the road on both sides to the end of the facility, followed by agricultural fields on both sides. There is a railway crossing at about 1 km from the beginning of the road. Bridges are located at 2.9km, 5.2km, 8 km, 10.1km, 12.9km, 15.6km, 18 km, 21.5km, 23.7km, 29.3km. Gas supply lines and high-voltage power lines run along the beginning of the road. There are many trees growing along the road, mainly in residential areas.

Kungirat district

4N79 Kungirot Shahri-Raushan MAC- Saksovoulsoy-Amudaryo reserve km 45.9-57

Highway 4H79 has the status of local importance. A stretch of road from 45.9 to 57 km leads to the Amudarya protected area "Saksaulsai", to Cape Urga, located on the Ustyurt plateau. There are desert zones along the road at this facility on both sides of the road. No communications have been laid, there are no trees.

4N105 "v" AZ80 highway (961km) - Barsakelmes mine km 0-12

The 4H105b highway has the status of local importance. It originates from 961km of the A-380 international highway and leads to the Barsakelmes salt quarry, where raw materials are extracted. There is a desert area on both sides of the road from the beginning of the object to the end of the object. There are no communications and trees along the road. The road is mainly used by trucks that transport raw materials, as well as working personnel working at the quarry.

4N105 "d" AZ80 highway - Raushan village km 0-22

The 4H105d highway has the status of local importance. It originates from 914 km of the international highway A-380 and leads to the settlement "Elabad". From the beginning of the road and up to 21 km on both sides of the road there is a desert area. At 21km on the left and 21.5km on the right, the road passes through the settlement of Elabad, where multi-storey buildings, a school and households are located, among which there is a grocery store. There are many trees along the road in the village. There are gas supply lines at the end of the road. There is a railway crossing at about 19.6km.

Muynak district

4N109 Muynak Shahri-Uchsoy villages km 0-15

The 4H109 highway has the status of local importance and runs through populated areas and leads to a facility - the Sharky Berdak integrated gas treatment plant. From the beginning, there are 500 households on both sides of the road, among which there are grocery stores and catering outlets. At the end of the residential area, desert zones are located on both sides of the road up to about 2 km from the beginning. From the 2km mark to the approximately 3.5km mark, there are households on both sides, among which there is a kindergarten. From the 3.5km mark to the approximately 9km mark on the right side and to the 10km mark on the left side, there are desert zones along the road. From the mark of about 6km on both sides, in a desert zone, with a frequency of 500 meters and 1km, drilling rigs and construction sites are located. On the right side of the road, from the 9km mark to the approximately 10km mark, there are households, among which there is a grocery store. At the end of the residential area, from the 10km mark to the approximately 12.5km mark, there is a desert zone. On the left side of the road from the 10km mark to the 13km mark there are households, among which there are grocery stores. At about 10.5km there is a kindergarten, a polyclinic and a cultural heritage monument, presumably dedicated to the participants of the Great Patriotic War. There is a school at the 11km mark. From the 13km mark to the end of the facility, there is a desert area where drilling rigs and construction sites are located. On the right side of the road, from the 12.5km mark to the approximately 14 km mark, there are households, at the end of which there is a desert zone to the end of the object. Gas utilities and high-voltage electricity lines periodically run along the road. There are no trees along the road.

Characteristics of the existing conditions of the projected local roads in the Khorezm region

Road survey during the feasibility study preparation period confirmed their unsatisfactory state. Examination of actual roads state showed that there is damage to the road surface on the highways.

The existing roads under repair, over a length of 188 km, have parameters of III; IV technical categories.

Bagat district

4K957 k. Sabirzan – k. Olazha – k. Kulonkorabog – road "Urgench-Khazarasp" section 10-24 km

Road category - IV. Length of the road - 14 km, from them 10 km pass through a populated area.

Width of existing road foundation - 10.0 m

Width of existing roadway part - 5.5-8.0 m, width of the roadsides - 1.0-2.0 m.

The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 4 cm to 20 cm, average thickness - 9 cm, condition - unsatisfactory

Gurlen district

Highway 4K921 city " Shovot - Gurlen" - village Sabinchi section 0-6 km
Road category - IV. Length of the road - 6 km through populated area.
General length of the project roads – 6 km.
Width of existing road foundation - 8.0 m.
Width of existing roadway part - 5.0-7.0 m, width of the roadsides - 1.0-2.0 m.
The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 3 cm to 10 cm, average thickness - 6 cm, condition - unsatisfactory.

Highway 4K985 Gurlan - Vazir village - Dekhkonobod villagesection 0-13 km
Road category – IV. Length of the road - 13 km, of which 8.4 km pass through populated area.
General length of the project roads – 13 km.
Width of existing road foundation - 8.0 m.
Width of existing roadway part - 6.0-8.75 m, width of the roadsides - 1.0-2.0 m.
The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 4 cm to 19 cm, average thickness - 8 cm, condition - unsatisfactory.

<u>Kushkupir district</u>

4K986A, AUTOYULIDAN - KUSHKUPIR KISHLOGIGA

Kushkupir villagesection 0-10 km
Road category - IV. Length of the road - 10 km, of which 3 km pass through a populated area.
Width of existing road foundation - 10.0 m.
Width of existing roadway part - 4.0-8.5 m, width of the roadsides - 1.0-2.0 m.
The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 4 cm to 24 cm, average thickness - 10 cm, condition - unsatisfactory.

4K986, KHIVA-GAZAVAT CITY - ARVUK . K. - MONOK K

Road category - IV. Length of the road - 25 km, of which 13.0 km pass through a populated area.
Width of existing road foundation - 10.0 m.
Width of existing roadway part - 5.0-7.0 m, width of the roadsides - 1.0-2.0 m.
The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 3 cm to 15 cm, average thickness - 6 cm,

condition - unsatisfactory.

Urgench district

Chatkupir village4K931 – Shovot cityplot 0-17.5 km

The construction site is located on the territory of.

Road category – III. Length of the road - 17.5 km, of which 9 km pass through a populated area.

Width of existing road foundation - 12.0 m.

Width of existing roadway part - 6.0-8.75 m, width of the roadsides - 1.0-2.0 m. The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 4 cm to 23 cm, average thickness - 12 cm, condition - unsatisfactory.

Highway 4K944 a/d "Urgench-Khiva" - k. Koramon - k. Kushkupirsection 0-16 km

Road category - IV. Length of the road - 16 km, of which 15 pass through a populated area.

Width of existing road foundation - 10.0 m.

Width of existing roadway part - 5.0-6.5 m, width of the roadsides - 1.0-2.0 m. The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 5 cm to 22 cm, average thickness - 11 cm, condition - unsatisfactory.

Chandirkiet village - Urgench - Khonka highwayplot 0-8 km

Road category - III. Length of the road - 8 km, of which 4 pass through a populated area..

Width of existing road foundation - 12.0 m.
Width of existing roadway part - 6.0-8.0 m , width of the roadsides - 1.0-2.0 m.
The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 4 cm to 16 cm, average thickness - 8 cm, condition - unsatisfactory.

Khiva district

Highway 4K949 Pirnahos village – Shomahulum village – Chanashik village – Khuzhaovul villagesection 2-14 km

Road category - IV. Length of the road - 12 km, of which 8 pass through a populated area.

Width of existing road foundation - 10.0 m.
Width of existing roadway part - 5.5-8.0 m, width of the roadsides - 1.0-2.0 m.
The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 3 cm to 24 cm, average thickness - 7 cm, condition - unsatisfactory.

Highway 4K951 Khiva city – Okep village – Ravot village – Korakum village – hell "Khiva-Gazavat" section 0-9 km

Road category - IV. Length of the road - 9 km, of which 5 pass through a populated area.

Width of existing road foundation - 10.0 m.
Width of existing roadway part - 5.5-7.5 m, width of the roadsides - 1.0-2.0 m.
The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 3 cm to 13 cm, average thickness - 7 cm, condition - unsatisfactory.

Khazarasp district

Highway 4K974 city of Khazarasp - To. Mutpuri - Toshsok channel plot 0-6 km

The construction site is located on the territory of.

Road category - IV. Length of the road - 6 km through populated area.
Width of existing roadway part - 5.0-7.5 m, width of the roadsides - 1.0-2.0 m.
The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 3 cm to 9 cm, average thickness – 5 cm, condition - unsatisfactory.

Highway 4K968 Bagat - Toma village - Dekhkonbozor village -To. Kizilrovot - city Khazarasp section 17-25 km

Road category - IV. Length of the road - 8 km, of which 5 km pass through a populated area.

Width of existing road foundation - 10.0 m.
Width of existing roadway part - 5.5-7.5 m, width of the roadsides - 1.0-2.0 m.
The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 3 cm to 18 cm, average thickness - 7 cm, condition - unsatisfactory.

Shavatsky district

Highway 4K931 Urganch town – Chatkupir village – Shavat townplot 17.5-31 km

The construction site is located on the territory of.
Road category – III. Total length of the planned road – 13.5 km. Width of existing road foundation - 12.0 m.

Width of existing roadway part - 6-8.75 m, width of the roadsides - 1.0-2.0 m.
The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 3 cm to 15 cm, average thickness - 8 cm, condition - unsatisfactory.

Yangiarik district

Highway 4K956 Yangiarikskaya big bypass road plot 33-44 km

The construction site is located on the territory of.
Road category - IV. . Total length of the planned road - 11 km through a populated area.
Width of existing road foundation - 8.0 m.
Width of existing roadway part - 4.5-7.0 m, width of the roadsides - 1.0-2.0 m.
The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 4 cm to 10 cm, average thickness - 6 cm, condition - unsatisfactory.

Highway 4K983 To. Chikirchi - lake Shurkul plot 0-8 km

Road category – IV. Total length of the planned road is 8 km, of which 6 km pass through a populated area.
Width of existing road foundation - 10.0 m.
Width of existing roadway part - 5.0-7.5 m, width of the roadsides - 1.0-2.0 m.

The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 4 cm to 20cm, average thickness – 8 cm, condition - unsatisfactory.

Yangibazar district

Highway 4N1925 k. Khayvat – k. Kalandurmanplot 0-11 km

Road category – IV. . Total length of the planned road 11 km, of which 7.65 km pass through a populated area.
Width of existing road foundation - 9.0 m.
Width of existing roadway part - 5.0-8.0 m, width of the roadsides - 1-2.0 m.
The existing asphalt concrete road surface consists of petroleum mineral mixture with thickness ranging from 4 cm to 14 cm, average thickness - 6 cm, condition - unsatisfactory.
All sections of the existing roadway of the designed roads have:

a) longitudinal, transverse, and network cracks;
b) rutting;
c)subsidence;
d) waves;
e) breaks;
f) peeling;
g) scaling;
h)potholesi) shifts.

List of roads in Khorezm region is presented in table No. 18. Table 18 List of roads of Khorezm Region

No.	Road Code & Section Name	Length (Km)
	Bogatsky District	
1	4K957, SABIRZAN K. - OLAZHA K.- KULONKORABOG K.-URGENCH-KHAZARASP HIGHWAY	14

	Gurlan District	
2	4K921, HIGHWAY “SHAVAT - GURLAN “ - FROM ABINCHI K	6
3	4K985, GURLAN -VAZIR TOWN - DEKHKONOBOD TOWN	13
	Kushkupir District	
4	4K986, KHIVA-GAZAVAT CITY - ARVUK . K. - MONOK K	25
5	4K986A, AUTOYULIDAN - KUSHKUPIR KISHLOGIGA	10
	Urgench District	
6	4K931, URGENCH- CHATKUPIR K.-G. SHAVAT	17.5
7	4K941, URGENCH - CHANDIRKIYOT K . - URGENCH - KHONKA HIGHWAY	8
8	4K944, “URGENCH-KHIVA” AUTOYULI - KORAMON K.- KUSHKUPIR K.	16
	Khiva District	
9	4K949, PIRNAKHOS K.- SHOMAHULUM K.- CHANASHIK K.- KHUZHAOVUL K	12
10	4K951, KHIVA - OKYOP K . - RAVOT K. - KORAKUM K. - “KHIVA-GAZAVAT” AUTOYULI	9
	Khazorasp District	
11	4K968, BAGAT CITY - TOMA K . - DEKHKONBOZOR K. - KIZILRAVAT K. - KHAZARASP HIGHWAY	8
12	4K974, KHAZARASP - MUTPURI K.- TOSHSOKA KANALI	6
	Shavat District	
13	4K931, URGENCH- CHOTKUPIR K.-G. SHAVAT	13.5
	Yangiarik District	
14	4K956, YANGIARYK BIG BYPASS ROAD	11
15	4K983, CHIKIRCHI K.- LAKE SHURKUL	8
	Yangibazar District	
16	4H1925, KHAYVAT K.- KALANDURMAN K .	11
	TOTAL KHOREZM REGION	**188**

Sensitive recipients, environmental and social conditions in Khorezm region.

Bagat district

4K957 k. Sabirzan – k. Olazha – k. Kulonkorabog – road "Urgench-Khazarasp" section 10-24 km

The 4K957 road has the status of state significance. It originates in the Honka region from the settlement of Sabirzon and leads to the settlements of Olazh and Kulankorabog. From the beginning of the road, on the right side and approximately to the 7km mark. there are sown fields. There is a small farm about 2.5km away. On the left side of the road, from the beginning and approximately to the 1km mark, there are agricultural fields and household plots. Houses and private plots are located from the 1km mark to about 2 km mark. At the end of the houses and homesteads, up to a mark of about 10 km from the beginning of the road, there are sown fields on the left side. At about 5.5km, there is an irrigation canal on the left side along the road, which stretches along the road for about 2 km. On the right side

of the road from the mark of approximately 7km to the mark of 8km there are households, at the end of which there are sown fields for approximately 1.5 km. After the cultivated fields, households are located on the right side of the road for a length of 2 km. Households are also located on the left side of the road for about the same distance. At the end of the road, there are sown fields on both sides of the road, which stretch for about 2 km. At the end of the sown fields on the right side of the road to the end of the road there are about 300 meters of households, then about 400 meters of sown fields, then about 500 meters of households, again about 200 meters of sown fields, at the end of which about 800 meters of households are located. Households are located on the left side of the road from about 12 km mark and to the end of the road for about 100 meters, then at a distance of about 600 meters there are sown fields, then at a distance of about 300 meters there are households, at the end of which there are sown fields to the end of the object. There are many trees along the road. From the beginning of the road at about 4.5 km, 5.5 km on one bridge and at 13 km 2 bridges with gas and water utilities.

Gurlen district

Highway 4K921 city " Shovot - Gurlen" - village Sabinchi section 0-6 km

The 4K921 road has the status of local importance, starts from between the district highway "Shovot-Gurlan" and leads to the settlement "Sabinci". from the beginning of the road, there are sown fields on both sides, which stretch to about 2km. At about 500 meters on the right side there are greenhouses. From the mark of about 2 km from the beginning of the road with a length of about 500 meters, residential buildings are located on both sides of the road. There is a school on the left side at the end of the households. From the mark of approximately 2.5km from the beginning of the road and up to the mark of 4.5km, there are cultivated fields on the left side of the road. At the end of the sowing fields, households are located to the end of the facility, also among which there is a polyclinic. On the right side of the road, from the mark of approximately 2.5 km with a length of 700 meters, there are cultivated fields, after which household plots and households are located for about 150 meters. At the end of the homestead plots with a length of about 400 meters, there are sown fields, after which households stretch for about 400 meters. At the end of the households, there are sown fields for about 200 meters, at the end of which there are households located to the end of the facility, between which there are several grocery stores. There are many trees along the road. At the beginning of the road along the object there are hydraulic fracturing units (gas distribution point). Also, from the beginning of the road to about 2km on the right side of the road, a canal stretches between the fields and the road. There are bridges at about 2.3km, 2.6km and 5 km from the beginning of the road.

Highway 4K985 Gurlan - Vazir village - Dekhkonobod village section 0-13 km

The 4K985 road has the status of local importance. It runs through the settlements of "Vazmr" and "Dehkonobod". From the beginning of the road to the mark of about 2 km on the right side there are households, among which there are also business entities and retail outlets. Also on the right side, at about 500 meters from the beginning of the road, with a length of about 200 meters along the road, there is a cemetery fence. On the left side of the road from the beginning to the mark of about 1 km there are residential buildings, among which there are also business entities. At the end of the road, on the left side, up to a mark of about 7 km, there are cultivated fields, among which there are private plots at a mark of about 5.5 km from the beginning of the road and a length of about 300 meters. On the right side from the mark of about 2 km to the

mark of 5 km there are sown fields. At the end of the fields on the left side, up to about 6 km from the beginning of the road, there are homestead plots. At the end of the homestead plots, up to about 9.5 km from the beginning of the road, there are cultivated fields, between which, at about 7.5 km from the beginning of the road, there is a substation of electric networks. On the left side of the road from the mark of about 7 km to the mark of 8 km there are household plots, between which there is a mosque at about 7.5 km. From the 8 km mark to about 8.5 km mark, there is a gas filling station on the left side, after which the sowing fields begin, which are located up to about 9.5 km mark. At the end of the sowing fields on the left side, up to the mark of about 11 km, there are households, among which there are business entities. On the right side of the road from the mark of about 9.5 km there is a water supply facility, after which there is a kindergarten, and then to the mark of about 11 km, there are households, among which there are business entities. From the 11 km mark to the approximately 12.5 km mark. there are sowing fields on both sides, at the end of which there is a fuel storage on the right side. At the end of the cultivated fields, there are households on both sides to the end of the road, among which there are grocery stores, and there is also a school on the right side. There are many trees growing along the entire site. At the beginning of the facility, gas utilities periodically run along the road. From a mark of about 1km. from the beginning of the road to the 5km mark, a canal runs along the right side of the road along the object. At about 2km, 3km, 4km, 5.5km, 8km. there are bridges, some have aqueducts running along them and at about 4.5km, 6.5km, and 10 km there are small bridges.

Kushkupir district

4K986A, AUTOYULIDAN - KUSHKUPIR KISHLOGIGA

The 4K986 road has the status of an inter-district road and connects the Khiva and Kushkupir districts. The first 11 km are geographically located in the Khiva district and originates almost from the center of the city of Khiva. From the beginning of the road to the mark of about 5 km. on both sides of the road there are social and facilities such as schools, colleges, a district hospital, municipal facilities such as the khokimiyat, retail stores, catering outlets, and residential buildings. At about 1km from the beginning of the road and with a length of about 500 meters, there is a grocery and hardware market on both sides of the road. From the mark of about 5 km. to the mark of about 12.5 km on the left side of the road there are cultivated fields, at the end of which, with a length of about 400 meters, there are households. After the households, up to a mark of about 15km, there are sown fields. On the right side of the road from the mark of approximately 4.5 km, with a length of about 700 meters, there are cultivated fields, at the end of which, with a length of about 800 meters, there is an industrial zone with manufacturing enterprises. From the mark of about 6km to the mark of 7km on the right side there are sown fields, at the end of which a gas station and production facilities are located about 500 meters long. From the 7.5km mark to the 15km mark, there are sown fields on the right side. On the left side of the road from the mark of about 15km. A gas station and points of sale for construction materials are located at a length of about 400 meters, at the end of which there are sowing fields up to about 16.5 km. From the mark of approximately 16.5 km and up to the mark of 17.5 km, there is a mixed goods market, where food, building materials and livestock are sold. At the end of the market, from the 17.5 km mark to the approximately 19 km mark, there are sown fields. On the right side of the road from the mark of about 15km, up to the mark of 16km, there are residential buildings, at the end of which there are sowing fields up to the mark of about 19km. There is also a school located between the fields at about 17.5 km, after which a canal runs between the road and the cultivated fields and households, bordering the road to about 20 km. On the left side of the road from the mark of approximately 19 km to and to the end of the object on the left side of the road there are homesteads and households, among which there are also grocery stores, between which there is a sowing field at the mark of 19.5 km, a school is located at the mark of 20.5 km, after

which there is a sowing field and at the mark of 22.5 km there is a sowing field. On the right side of the road from the mark of about 20 km, to the end of the object there are homesteads and households, among which there are grocery stores, between which there are sowing fields at about 21.5km and 22 km. Starting at about 8.5 km from the beginning of the road, a canal runs along the road sometimes on the right, sometimes on the field side and almost to the end of the object. There are many trees along the road. There are bridges at approximately 5.6km, 6km, 6.5km, 6.8km, 8km, 11.3km, 13.3km, 16km, 18km, 20km, 21.5km, 23km. For 14 km along the road and to the end of the facility there are gas utilities and several gas distribution points.

4K986, KHIVA-GAZAVAT CITY - ARVUK . K. - MONOK K

The 4K986a road has the status of an inter-district road originates from the 4K986 road and leads to the settlement "Kushkupir". From the beginning of the road to the mark of approximately 3.5 km, there are cultivated fields on both sides of the road. From this mark, on the left side of the road with a length of about 400 meters, there are homesteads and households, after a length of about 500 meters there are sown fields, then with a length of about 300 meters there are homesteads and households. On the right side of the road from the mark of about 3.5 km, on the right side of the road, with a length of about 1.2 km, there are homesteads, orchards and households, at the end of which there is a school. From the approximately 4.7km mark to the approximately 5.5km mark, there are cultivated fields on both sides of the road. From the approximately 5.5km mark to the 6km mark, there are households on both sides of the road. At the end of the households on the right side of the road, there are sown fields to the end of the object. On the left side of the road from the 6km mark to the approximately 8.5km mark on the left side there are sown fields, at the end of which, with a length of about 300 meters, there are households, at the end of which there are sown fields to the end of the object. There are many trees along the road. From the beginning of the road to the mark of about 1km. on the left side, a canal runs between the road and the cultivated fields. From the 2km mark to the 4km mark. on the right side, a canal flows between the road and the cultivated fields. Along the entire length of the facility, a gas main line and several gas distribution nodes are laid along the road. There is also a water conduit along the road. There are bridges at about 2km, 4.5km, 9.5km from the beginning of the road.

Urgench district

Chatkupir village4K931 – Shovot city plot 0-17.5 km

The 4K931 road has the status of state significance, and is between the district junction of Urgench and Shavat districts. The road starts from the Urgench district and on the right side of the road to a mark of about 500 meters there are business entities, such as catering outlets, hardware and grocery stores, at the end of which from a mark of about 500 m to a mark of 1 km there are sowing fields and greenhouses. There is a mosque and a cemetery from the 1km mark to about 1.5km mark from the beginning of the road. At the end of the cemetery, household plots are located up to about 4.5 km, between which, at about 2.5 km from the beginning of the road, there is a school. On the left side from the beginning of the road, approximately to the 1km mark, there are production facilities, construction warehouses and shops, between which a gas station is located at about 300 meters from the beginning. At the end of the production premises with a length of about 150 meters, there is a field with greenhouses, after which there is an oil depot on the same length, after which there are sowing fields on a length of about 250 meters. At the end of the sowing fields, there are business entities, including grocery stores and car washes. At the end of the business entities, a sowing field is located approximately to the 2km mark from the beginning of the road. On the left side

of the road from the mark of about 2.5 km and up to the mark of 4 km there are household plots, among which there are small retail outlets, and at the end there are several business entities catering and providing services. From the 4km mark to the approximately 5km mark, there are sown fields. On the right side of the road, from the 4.5km mark to the approximately 6 km mark, there is a greenhouse and cultivated fields, at the end of which a district electric substation is located with a length of about 150 meters. After the electric substation, there are sown fields up to the 6.5km mark. After which, households are located up to about 7km, among which there are small retail outlets. At the end of the residential area, up to about 8 km, there are sowing fields, at the end of which, up to about 9.5 km, there are households, between which there is a sowing field at about 9 km with a length of about 200 meters. After the households, from the 9.5km mark to the approximately 11 km mark, there are cultivated fields. On the left side of the road from the 5km mark to about the 6.5 km mark there are household plots, at the end of which there are sown fields up to about 11km, at the end of which there is a poultry farm with a length of about 200 meters. On the right side of the road from about 11km mark to 12.5km mark there are homesteads and households, among which there are small retail outlets and construction shops. A gas filling station is located at the end of this array. After refueling, sowing fields are located from about 12.5km to 13.5 km. At the end of the cultivated fields, from the 13.5km mark to the 15.5 km mark, there are homesteads and households. From the 15.5 mark to the approximately 17.5 km mark, there are sown fields. There are residential buildings on the left side of the road from about 11km to the 11.5 mark, among which there are also 2 schools. From the 11.5km mark to the 17.5km mark, there are residential buildings, between which at about 13 km mark, with a length of about 300 meters, there are homesteads and orchards. There are many trees along the road throughout the facility. Bridges are located at approximately 2.6km, 4.8km, 5.5km, 11.2km, 13 km, 14.4km, 14.5km. Parallel to the bridges, the road is crossed by gas utilities.

Highway 4K944 a/d "Urgench-Khiva" - k. Koramon - *k. Kushkupir section 0-16 km*

The 4K941 road has the status of state significance and originates from the Urgench district and crossing the settlement "Chandirkiet", connects with the interdistrict highway "Urgench-Honka". The road is divided into two segments, one of which stretches from 0 to 5km, the second part stretches from 5km to 8km. From the beginning of the road to the mark of about 1 km on the left side of the road there are production and storage facilities, business entities, shops of various equipment and hardware stores catering outlets. On the right side of the road, the first about 300 meters are occupied by cultivated fields, after which the GZS is located, at the end of which, up to about 1 km, there are also production and storage facilities, business entities, shops of various equipment and hardware stores catering outlets. At the 1km mark, the road is crossed by a railway track. On the left side of the road from about 1km mark to 2km mark there are about 500 meters long sown fields, after which households and household plots are located about 300 meters away, after which a college is located 200 meters away and at the end the adjacent territory on which an orchard is located. On the right side of the road from the mark of about 1km to the mark of 2km, for a length of about 250 meters there are cultivated fields, then for a length of about 600 meters there are households and household plots, at the end of which there is a mosque for a length of about 150 meters. From the mark of about 2 km and to the end of the first segment of the road, the road runs through the locality of "Chandirkiet". On the left and right sides of the road there are households and homesteads, among which there are also orchards. There is a school located among the households at about 3km from the beginning of the road. The second segment of the road begins at the 5km mark and from this mark approximately to the 7km mark, there are cultivated fields on both sides of the road. At about 6km, the road intersects with the railway tracks. From the mark of about 7 km to the end of the object, there are households on both sides of the road, at the end of which there is a gas station on the left side, and on the right side after the households, about 300 meters long, there are sowing fields, after which there is a garage of

agricultural machinery, after which there are several retail stores. There is a cemetery at the end of the road. There are many trees along the road along the length of the entire facility. Gas utilities periodically run along the road at different distances from the road. There are bridges at about 1km, 2km and 6km.

Chandirkiet village - Urgench - Khonka highway plot 0-8 km

The 4K944 road is an inter-district connection that leads from the Urgench district to the Kushkupir district, has the status of state significance. This road originates from the Urgench district and crosses the settlements of "Koramon" and "Kushkupir". On the right side of the beginning of the road, for about 700 meters, there are cultivated fields, at the end of which, up to about 4 km, there are households, among which there are also grocery, hardware and construction shops, between which a school is located at about 2.5 km from the beginning of the road. On the left side of the beginning of the road, approximately 700 meters long, there are cultivated fields, at the end of which, about 150 meters long, there is a grocery store and business entities providing services such as car service, etc. At the end of the adjacent territories to the business entities, the sowing fields begin, which are located up to about 10 km, among which there are several homesteads and greenhouses. There are also water supply facilities located between the fields at about 7km and 8km. On the right side from the mark of about 4 km to the mark of about 9.5 km there are sown fields, between which the cemetery territory is located at about 6.5 km with a length of about 250 meters, and at about 7 km with a length of about 300 meters there are gas stations and household plots. At the end of the fields, from about 9.5 km to the end of the object, there are households, homesteads, grocery and hardware stores, various business entities, schools are also located at about 11km and 14km, a kindergarten is located at about 15.5 km and at about 10.5km and 12 km of cemetery territory. On the left side of the road, from about 10km to 13km, there are households, homesteads, catering outlets, various kinds of retail stores and business entities. There is also a kindergarten at approximately 11.5 km. From the mark of about 13 km to the mark of 15 km, there are cultivated fields, among which several homesteads and households are located at about 14 km. At the end of the sowing fields, households, various kinds of retail stores and business entities are located to the end of the facility. A water supply facility is located among the residential area, at the end of the residential area there is a sports complex and a school. A large number of trees grow along the road throughout the facility. There are bridges at approximately 8.3km, 9.2km and 15 km. Gas utilities and gas distribution points are located mainly in populated areas, as well as at the beginning of the facility along the road.

Khiva district

Highway 4K949 Pirnahos village – Shomahulum village – Chanashik village – Khuzhaovul village section 2-14 km

The 4K949 highway has the status of local importance, which runs through the settlements of Pirnakhos, Shomakhulum, Chanashik and Huzhaovul. The project area of the facility starts at 2 km and ends at 14 km. The road is divided into 2 parts: the first of them is from 2 to 4 km, the second from 4 to 14 km. From the beginning of the project area from the 2km mark to the approximately 3km mark, there are households on both sides of the facility, with a school between them. Also in the residential area there are various kinds of business entities, such as grocery stores, catering outlets, banquet facilities, etc. From the 3km mark to the 4km mark, there are sowing fields on the left side of the road, on the right side along the road at a distance of 700 meters there is a canal, beyond which there are sowing fields, at the end of which homesteads and households are located. From the 4km mark to the approximately 7km mark, on the

right side of the road there are 350 meters of households, 400 meters of cultivated fields, 2.25 households, between which there is a cemetery at about 5.8km. On the left side of the road from the 4km mark, to the approximately 6.7 km mark, there are homesteads and households, between which the cemetery territory is located at the 5km mark. At the end of the residential area, the field side to the mark of about 8 km, there are sown fields, at the end of which there is a school. On the right side of the road from the 7km mark to the 8 km mark, there is a sowing field for 250 meters, after which a canal stretches along the road for about 750 meters. On the left side of the road, up to about 9.5km, there are homesteads and households, at the end of which there is a drinking water distribution node. On the right side of the road, up to the 9.5 km mark, there are homesteads and households and, at the end of which there are sown fields. On the right side from the 9.5km mark to the approximately 11 km mark there are cultivated fields, at the end of which there are homesteads and households, among which there are various kinds of business entities, to the end of the object. On the left side of the road, from the 9.5km mark to the approximately 10.5km mark, there are cultivated fields, after which there are households, at the end of which the cemetery territory is located. From the mark of approximately 11km, to the end of the object there are homesteads and households, among which there are also various kinds of business entities. There are many trees along the road. At the 3km, 7.3km, 9km, 9.1km, 12.5km marks, there are bridges parallel to which water and gas communications run.

Highway 4K951 Khiva city – Okep village – Ravot village – Korakum village – hell "Khiva-Gazavat" section 0-9 km

The 4K951 road has the status of local significance, which originates in the city of Khiva and leads through the settlements of Okep, Ravot, Korakum to the Khiva-Gozovot highway. On the right side from the beginning of the road to the mark of about 500 meters, business entities for the provision of services are located on the first 150 meters, then 100 meters away there are sowing fields, after which the cemetery territory is located 100 meters away. At the end of the cemetery territory, there are private plots located 150 meters away. On the left side, from the beginning of the road to about 500 meters, there is a canal, beyond which there are households. From the 500 meter mark to the approximately 1.25km mark, there are cultivated fields on both sides of the road. At the end of the cultivated fields, on both sides of the road up to about 1.8km there are homesteads and households, among which there are also small shops and business entities. At the end of the households, there are sown fields on both sides, which stretch to a mark of about 2.8km on the left side, and to a mark of about 3 km on the right side. On the left side, at the end of the cultivated fields, up to about 4.5 km, there are household plots and households, among which there are business entities such as: catering outlets, grocery, hardware and construction stores, production and storage facilities. On the right side of the road, at the end of the cultivated fields, from the 3km mark to the 4km mark, approximately 300 meters long along the road there are homesteads and households, after which there is a canal along the road for about 400 meters along the road, at the end of which business entities such as shops are approximately 100 meters long along the road and production facilities. At the end of the business entities, the school territory is located. Upon graduation, households are located from about 4km to about 5.5km. After the households from the 5.5 mark to the end of the facility, there are cultivated fields, between which a water supply facility is located at about 6.5km and several homesteads and households are located at about 8.5 km. On the left side of the road from the approximately 4.5km mark of the 800 metro line there are cultivated fields, at the end of which, for about 1 km, there are homesteads and households. At the end of the construction to the end of the facility, a canal runs along the road, beyond which there is a small lake up to about 7.5 km, which is also used for fishing. After the lake to the mark of about 8.5 km, there are cultivated fields behind the canal. At the end of the sowing fields, households are located behind the canal to the end of the facility. There are many trees along the road along the entire

length of the road. Gas utilities run along the entire length of the road at different distances. At 500 meters, 1.3km, 2.6km, 3.2km, 3.5km, 5.7km, 6.8 km there are bridges, some of which have gas and water utilities running along them**.**

Khazarasp district

Highway 4K974 city of Khazarasp - To. Mutpuri - Toshsok channel plot 0-6 km

The 4K 974 highway has the status of local importance, leading from the regional center through the village of Mutpuri to the Toshsoka canal. According to the project, the road is divided into two parts. The length of the first part is about 1.5 km. It originates from the district center. There are retail outlets on both sides of the road for about 500 meters. At the end of the outlets, the cemetery territory begins on the left side. There are also residential buildings for about 100 meters. On the left side, at the end of residential buildings for about 300 meters, the cemetery territory is again. Residential buildings are located after the cemetery and to the end of this site. On the right side, after the end of the outlets, there are residential buildings opposite the cemetery and until the end of this segment. At the second road from the beginning on the right side there are orchards that stretch for a distance of about 100 meters. At the end of the gardens, from the beginning of the road and up to the mark of about 2 km, there are residential buildings. There are residential buildings on the left side from the beginning of the road and up to about 1.5 km mark. After the houses, the fields are located on the field side for about 500 meters. After the fields, about 200 meters long, there are residential buildings. There is an orchard on the opposite side at the same distance. At the end of the garden, there are houses with a length of about 200 meters, after which there are sowing fields with a length of about 200 meters. On the opposite side of the road, at the end of residential buildings with a length of about 500 meters, there are cultivated fields. These descriptions stretch to a mark of approximately 2.5 km from the beginning of this section. From this point to about 3 km from the beginning, residential buildings are located on the left side for 50 meters, at the end of which there are cultivated fields. On the right side, up to the 3 km mark, there are residential buildings, at the end of which there is a retail outlet. Up to the mark of about 4 km from the beginning, residential buildings are located on the right side of the road after the sowing fields, and on the left side there are sowing fields. After the residential buildings with a length of about 200 meters, there is a sowing field, after which residential buildings are located up to about 4.5 km. Residential buildings are located on the right side of the approximately 4 km mark and to the end of the object. On the left side of the mark, about 4.5 km, for a length of about 500 meters, there are cultivated fields, at the end of which residential buildings are located to the end of the object. At the end of the object, this road is crossed by a wide canal. There are many trees growing along the road throughout the entire facility.

Highway 4K968 Bagat - Toma village - Dekhkonbozor village - To. Kizilrovot - city Khazarasp section 17-25 km

The 4K968 highway has the status of local significance, which originates from the Bagat district, and connects with the regional center of the Khozrasp district, passing through the settlements of "Toma", "Dekhkonbozor", "Kizilrovot". The project area of the facility begins at the end of the settlement "Toma", from 17 km. From the beginning of the road to the end of the object, on both sides there is a residential area with households and homesteads, between which there are also grocery, hardware and construction stores, catering outlets and various business entities. There are also crop fields along the road in places. From the beginning of the road, at about 800m on the right side of the road there is a medical center and at about 2.7km there is a polyclinic. At about 2.2km from the beginning of the road, there is a school on the left side. 100 meters after graduation, the cemetery territory is located along the road. At about 3.3km to about 3.8km, there are sown fields on both sides of the road between households, at the end of which there are households on the left side of the road to the end of the facility, among which there are various kinds of business entities. At about 4.8 km there is a private kindergarten, 150 meters after which there is a cemetery area. There is also a cemetery area at about

5.7km. From a mark of about 4.8km to a mark of about 5.5km, there are cultivated fields on the right side of the road, at the end of which the cemetery territory is located for about 200 meters. At the end of the cemetery territory, on the right side of the road there are households, between which there are various kinds of business entities. At about 7km from the beginning of the object, the road intersects with the railway track. There are many trees growing along the site, gas utilities also run along the road, and there are several gas distribution points. There are bridges at 1.2km, 2.9km, 6.5km.

Shavatsky district

Highway 4K931 Urganch town – Chatkupir village – Shavat town plot 17.5-31 km

The 4K931 road has the status of state significance, and is between the district junction of Urgench and Shavat districts. In the Shavatsky district, the project area of the highway starts from 17.5 km and ends in the district center. On this segment, on the right side of the road, up to about 18.5km, there are cultivated fields, at the end of which, from about 18.5km to about 19.5 km, there is a school, then households and household plots of land. From the 19.5km mark to the approximately 25.5km mark, there are cultivated fields and orchards, at the end of which there is a residential area with many households and premises of various business entities, such as shops, pharmacies, catering outlets, and the service sector. On the left side of the road from the 17.5km mark, 500 meters along the road there are sown fields, at the end of which households are located at about 800 meters, after which sown fields are located up to about 26 km. From the mark of approximately 26 km to the end of the facility, there is a residential area, among which there are also social facilities such as a school and a district hospital and many different types of business entities such as shops, pharmacies, catering outlets and various service sectors. There are many trees along the road. At the marks of 100 meters, 500 meters, 4.7 km, there are bridges.

Yangiarik district

Highway 4K956 Yangiarikskaya big bypass road plot 33-44 km

The 4K956 highway has the status of local importance and is a large bypass road of the district. From the beginning of the 33km road to the mark of approximately 34.5km, 700 meters on both sides of the road there are cultivated fields and homesteads, 800 meters on both sides along the road there are households and homesteads. From the 34.5km mark to the approximately 36 km mark, there are cultivated fields and orchards on both sides of the road. From the 36km mark to the approximately 37km mark, there are households on both sides of the road, among which there are also small grocery stores. At the end of the household, there is a school on the right side of the road. From the 37km mark to the 38km mark, 800 meters along the road on both sides there are fields and homesteads, 200 meters there are households, among which there are production facilities and various business entities. From the 38km mark to about 41km mark, 250 meters on both sides of the road there are cultivated fields and household plots, 2.75km on both sides of the road there are households, among which there are also various kinds of business entities: shops, catering outlets, textile workshop, etc.. The school is located at about 40km. On the right side of the 41km mark to the end of the object, 600 meters along the road there are households, at the end of which there are sown fields, between which there is a GZS at about 43.5. On the left side of the road from the mark of approximately 41 km and to the end of the object, about 1 km is occupied by cultivated fields, then about 500 meters of household plots and several households, at the end of which a canal flows along the road, behind which there are cultivated fields, between which there is a farm. There are many trees along the road. Gas utilities run along the road. There are bridges at 1.6km, 2.8km, 4.2km, 5.4km, 5.7km.

Highway 4K983 To. Chikirchi - lake Shurkul plot 0-8 km

The 4K983 highway has the status of local importance and runs through the settlement "Chikirchi" and leads to the lake "Shurkul", after which the military border garrison is located. From the beginning of the road to the mark of about 3.3km on both sides there

are households and household plots, among which there are also various kinds of business entities, such as a pharmacy, grocery, hardware and construction stores, catering outlets, provision of various services, etc. From the beginning of the road to about 500 meters, a canal runs between the road and the households. Schools are located at 150 meters and 1.8 km from the beginning of the road. On the left side of the road from the mark of about 3.3 km and to the end of the object there are sown fields, between which, at about 5 km, there is a water supply facility. On the right side of the road, from the 3.3km mark to the 5.6km mark, there are cultivated fields, at the end of which, to the 7 km mark, there are fisheries. After the fish farms and to the end of the facility there are sown fields. There are many trees along the road in the village. There are bridges at about 800 meters, 1.4km and 5.6km.

Yangibazar district

Highway 4N1925 k. Khayvat – k. Kalandurman plot 0-11 km

The 4H1925 road has the status of local importance and runs through the settlements of "Khayvat" "Kalandurman". From the beginning of the road on the left side there is a catering point, after which, up to the 2km mark, 1.5 km away are sown fields, at the end of which there are household plots at 500 meters. On the right side of the road, up to about 2 km, there are 500 meters of households, at the end of which there are 1.5 km of cultivated fields and orchards. On the right side of the mark of about 2 km to the mark of 5.3 km there are households among which there are also shops and various business entities, between which there is a school at about 4.5 km and at the end of the residential area there is a gas station and a school. On the left side of the road from the mark of about 2 km to the mark of 7.3km there are cultivated fields, between which at the marks, approximately 2.5 km long, 250 along the road, at the mark of 2.8 km long, 500 meters along the road, at the mark of 3.8km, 500 meters long, at the mark of 4.5 km, about 200 meters long there are household plots and households, among which there are also shops and various business entities. On the right side of the mark of approximately 5.3 km to the mark of 7 km there are sown fields. Households are located from about 7km to 8.5km. On the left side of the road, from about 7.3km to 8.5km, there are households, between which the school grounds are located at about 7.8km. From the 8.5km mark on both sides of the road to the end of the object, there are 400 meters of cultivated fields along the road, at the end of fields approximately 800 meters long, households and homesteads, after which the sowing fields are located at the end. There are many trees along the roads. Gas utilities run along the road and there are several gas distribution points. At 200 meters, 2 km, 2.6km, 3.9km, 7.5km, there are bridges along which gas and water supply communications also run.

Main works and parameters of the project in Republic of Karakalpakstan

The project area in the territory of the Republic of Karakalpakstan is divided into several sections by districts:

- Road section Amurdarya - 23 km
- Road sections Beruniy - 73 km
- Road sections Kegeyli - 32 km
- Road sections Nukus- 26 km
- Road sections Taxtako'pir- 10 km
- Road sections Daukhara- 15 km
- Road sections Shumay-10 km
- Road sections Karauzyak-10 km
- Road sections Kanlikul – 67 km
- Road section Kungrad - 55.1 km

- Road section Muynak - 27 km

The period for implementing the capital repair project for public roads in the Republic of Karakalpakstan, according to the directive of the Cabinet of Ministers of the Republic of Uzbekistan No. 24/1-1744 dated August 15, 2017, is set for 2017-2022.

Predicted deadlines capital repairs design highways:

Preparatory works – 2023-2024;

Construction works:

- Construction of the roadbed, installation of artificial structures, paving - 2025-2027;
- Road structure development - 2027 year;
- Commissioning of the facility – 2027 year;
- Warranty period - until November 2029;

The main parameters of the design roads are presented in the table below:

Table 19 main parameters of the project road

No.	Name parameters	Unit change	Indicators
1.	Administrative meaning	-	local
2.	Highway category	-	III (IV) V
3.	Estimated speed	km/h	100 (80) 60
4.	Load on the single most loaded axle of the vehicle	kN/ton-force	100/10
5.	Number of lanes	pcs.	2 / 1
6.	Width of the lanes	m	3.5 (3.0) 4.5
7.	Width of the roadway	m	7.0 (6.0) 4.5
8.	Width of the shoulder	m	2.5 (2.0) 1.75
9.	Width of the edge strip of the shoulder	m	0.5 (0.5)
10.	Width of the roadsides	m	2.0 (1.5) 1.75
11.	Width of the roadbed	m	12.0 (10,0) 8.0
12.	The largest longitudinal slopes	‰	30
13.	The smallest visibility distances for stops	m	450
14.	The minimum radius of curves	m	3000
15.	The minimum radius of curves in the longitudinal profile: convex concave	 m m	 70000 8000
16.	The minimum lengths of curves in the longitudinal profile: convex concave	 m m	 300 100
17.	Cross slope of the roadway	‰	15
18.	Cross slope of the shoulders	‰	40
19.	Intersections and junctions	-	ON the same level
20.	Type of pavement	-	Capital
21.	Type of the surface	-	Asphalt concrete

Roadbed

The widening and filling of the roadbed is carried out using soil brought to the highway by dump trucks from the quarry according to the volume of excavation work.

The main leading machines in the construction of the roadbed are a scraper, a bulldozer, an excavator with dump trucks and a roller. The need for earthmoving machines will be determined based on the volume of earthworks and the production rates of machines, vehicles, taking into account the distance of transportation of materials.

Artificial structures

Pipes

The project includes the dismantling of existing asbestos-cement, metal, cast iron pipes and reinforced concrete links. In exchange for the dismantled pipes, the project provides for:

- Installation of metal pipes with a 530mm opening, 11mm wall thickness;
- Installation of metal pipes with a 820 mm opening, 11 mm wall thickness;
- Installation of metal pipes with a 1020mm opening, 11mm wall thickness;
- Installation of metal pipes with a 1220mm opening, 12mm wall thickness;
- installation of metal pipes with a 325mm opening, 8mm wall thickness under ramps;
- extension of existing reinforced concrete pipes with a diameter of 1.0 m;
- extension of existing reinforced concrete pipes with a diameter of 1.2 m;
- extension of existing reinforced concrete pipes with a diameter of 1.5 m.

Bridges

Based on the diagnostic survey of bridge crossings, the project provides for major repairs or complete replacement of the structure. There are 79 bridge crossings in total, including:

- repaired – 1 piece;
- newly constructed – 78 units.

Surface drainage

In some sections of the designed public roads in populated areas, storm water drainage from the roadway is carried out using existing reinforced concrete trays with the installation of additional design blocks, while the broken blocks of the existing trays are subject to replacement. Laying of trays LK-6.6. is arranged on the preparation of crushed stone-sand mixture. When backfilling the roadbed, it is necessary to take into account the leveling and layer-by-layer compaction of the soil.

Reconstruction of utility lines

Before the start of excavation work on the sections of major repairs of public roads of the Republic of Karakalpakstan, the project provides for the following works:

- on the installation of casings for utility lines;
- reconstruction of gas pipelines;
- reconstruction of power transmission lines 0.4 kW; 0.6 kW; 10 kW;
- reconstruction of communication lines.

Table 20 Discription of sictions

Number of the road	Hghways name	Gas pipeline	Water supply system	Communication line
Amudarya district				

4K21"a"	4P160 autoyulidan - Mangit Shahri-Zhumurtov pier	PC0+32 PC12+70 PC18+27 PC19+70 PC27+85 PC29+84PC35+00 PC39+60 PC42+26PC43+31 PC46+18 PC51+50PC64+10	-	-
4N62	Dustlik MAC-Shiyik Kala-Uychi ovules	-	-	-
Beruniy district				
4K27	Beruniy c..-Okshakol burdokichilik bazasi	PC58+15 PC62+10 PC77+66 PC82+55 PC86+61 PC4+86 PC7+70 PC10+72 PC14+54 PC18+95	-	-
4K28	Beruniy highway-Navoiy farm-Makhtumkuli MAC	PC1+17 PC2+67 PC4+45 PC8+30 PC18+97 PC84+67PC88+34	-	-
4k51A	Avtoyulidan-Kirkizobad DFHGA	-	-	-
4N115	AVTOYULI (40KM)-SARIBIY OVULI KM0-20”	-	-	-
4K32G	“A-380 AVTOYULI (589 KM)-SHURAKHON OIL BASE KM0-5”	-	-	-
	Kegeylin district	-		
4K34"b"	4P176 autoyuli (31 km)-Kuvonish-jarma MAC	PC 0+46; PC 06+08; PC 35+62; PC 42+37; PC 51+86	-	-
4H85	KOZONKETGKAN OVULI-KS-1-SHAHAMAN OVULI KM30-40			
4K7 “4R175	AVTOYULI-KS-1-MAIZHAP DFH” MOTOR ROAD ON THE 0-10KM SECTION	-	-	-
Muynak district				
4N109	Muynak Shahri-Uchsoyovules	PC2+47; PC 22+39; PC 26+40; PC 28+00; PC 108+00; PC 23+40; PC 30+00; PC 37+00; PC 38+00; PC 98+29; PC 103+97; PC 111+94; PC 115+00; PC 118+00; PC 119+00; PC 121+00 Transfer gas pipeline average pressure from K120+25 to PC121+90	"Installation case for water pipes networks on highways "4N109"in Muynak district"	construct metallic case along the highway 4N109 on 0.225 km for communication line with the diameter of 100mm, wall thickness of 0.8mm
4K2 “4R173	AVTOYULI (26KM) KIZILZHAR OVULIGA KM0-12” ROAD	-	-	-

Nukus district				
4K18	Kattagar MAC - Kreituzak suv taximlash inshoty	PC0+07,0+35, PC 12+08, PC 52+97, PC 58+99, PC 60+87, PC 102+36	-	construct metallic case along the highway 4K18 at 0 km for communication lines with the diameter of 100mm, wall thickness of 0.8mm
4K42 “4R171”D”	AVTOYULI (4KM)-KHUZHAILI SH.-OKHUNGBOBOEV DFH-SHOMURATOV DFH” KM 0-10	-	-	-
Takhtakupir district				
4N42	Dauhara DFH-Borshetov MAC	-	-	construct metallic case along the highway 4N42 at 0 km, 0.95km, 2.4km for communication lines with the diameter of 100mm, wall thickness of 0.8mm
Daukhara Dfh-Borshetov district				
4N42	DAUHARA DFH-BORSHETOV DFH KM0-15 MOTOR ROAD	-	-	-
Shumanay district				
4N20 "and"	4P177 autoyuli (28 km) - A. Musaev MAC	PC0+16; PC1+67	" Case for water pipes Installation on highways "4N20zh" in Shumanay district"	Construct metallic case along the highway 4N20"zh" at 0 km and 0.5 km for communication lines with the diameter of 100mm, wall thickness of 0.8mm
Konlikul district				
4N87	Konlikul-Zhaihun MAC-Ajiniyaz MAC	-	" Case for water pipes Installation on highways "4N87"in Konlikulsky district"	Construct metallic case along the highway 4N87 at 0 km and 0.5 km km for communication lineswith the diameter of 219mm, wall thickness 0.4mm

4N88	4P173 autoyuli (61km)-Oltinkul MAC-Bekop pump station-Korabayli Temir yule stations	PC100+81; PC161+01; PC162+04	" Case for water pipes Installation on highways "4N88"in Konlikulsky district"	Construct metallic case along the highway 4N88 on 8.025 km and 9.525 km km for communication lineswith the diameter of 219mm, wall thickness 0.4mm
Kungirat district				
4n79	Kungirot Shahri-Raushan MAC- Saksovulsoy-Amudaryo kurikhonashi	-	-	Construct metallic case along the highway 4N79 at 0km km for communication lineswith the diameter of 100mm, wall thickness 0.8mm
4N105 "v"	AZ80 autoyuli (961km)-Barsakelmes coniga	-	-	Construct metallic case along the highway 4H105 "в" at 0.9 km for communication lines with the diameter of 100mm, wall thickness 0.8mm
4N105 "d"	AZ80 autoyuli - Raushan ovuliga	PC0+25; PC2+90; PC5+51	-	Construct metallic case along the highway 4N105"d"at 0 km km for communication lines with the diameter of 100mm, wall thickness0.8mm

Road paving

The project proposes 2 road surface design options for comparison:

Option 1. Involves dismantling (milling) the existing pavement using the material from the dismantling in the bases of the road surfaces being repaired.

The structure is presented by a two-layer asphalt concrete covering for category III:

Option 2. Involves cold recycling of the existing road surface with the addition of a binder (cement) and a stabilizing additive, compaction of the resulting mixture and the installation of a single-layer coating from a hot dense f/g a/c mixture.

Intersections and junctions

The project provides for improvement works of junctions (ramps). The radius of curvature of ramps is adopted depending on local conditions and existing buildings. The width of the carriageway of ramps is adopted equal to the existing one. The volumes of works are taken into account on the area by the design length of ramps.

The design of the road surface of the exits within the curves is identical to the design of the road surface of the main highway.

Under the ramps in places where trays LK-6.6 are installed, according to the longitudinal profile, metal pipes with a diameter of 325 mm and a thickness of 8 mm are laid on a gravel-sand base 20 cm thick to pass storm water. The pipes are connected to trays LK-6.6 using heads made of monolithic concrete of class B20. The pipes are waterproofed by coating with hot liquid bitumen in 2 layers.

Road devices and road conditions

To ensure the regulation and safety of road traffic, the road is equipped with the following elements:

- road signs and indicators;
- signal posts CC 160.16;
- fencing blocks - 1BDO-3.100; 1OT-300.30; 1OT-100.30 and OT-100.20;
- roadway markings;
- electric lighting in populated areas;
- sidewalks;
- bus stops with shade canopies.

Bus stops

The project provides for the construction of bus stops. The design of the bus stops (pockets) is provided according to the type of the main road. The design of the landing area:

- hot dense f/g a/c mixture coating – 0.04 m;
- base made of crushed stone and sand mixture – 0.10 m.

The boarding area is separated from the stopping area (pocket) by blocks 1OT-300.30 and 1OT-100.30. For passengers waiting for transport, shade canopies are provided.

Sidewalks

In populated areas, the project provides for the installation of 1.5 m wide sidewalks on both sides. In cramped conditions, the sidewalk is installed on the roadbed on one side, 1.5 m wide.

Construction of paving of sidewalks:

- hot dense f/g a/c mixture coating – 0.04 m;
- crushed stone-sand base – 0.10 m;

Sidewalks are fenced with OT-100.20 blocks. Sidewalks located on the roadbed (Type 4) are fenced from the roadway with 1OT-300.30 and 1OT-100.30 blocks.

Sequence of execution of road construction works

The work must be carried out in a technological sequence in accordance with the attached schedule, taking into account the combination of individual types of work by specialized teams equipped with the necessary mechanisms, machines and units.

Construction should be carried out in the following technological sequence:

a) preparatory work;

b) construction of artificial structures;

c) reconstruction of engineering structures;

d) construction of the roadbed;

d) construction of road surfaces with surface drainage;

e) road conditions and equipment.

Main works and parameters of the project in the territory of Khorezm region

The project area in the territory of Khorezm is divided into several sections by districts:

- Road section Bagat - 14 km
- Road sections Gurlan - 19 km
- Road sections Koshkupir - 35 km
- Road sections Urgench – 41.5 km
- Road sections Khiva – 21 km
- Road section Khazarasp - 14 km
- Road section Shavat – 13.5 km
- Road section Yangiarik - 19 km
- Road section Yangibazar - 11 km

The period for implementing the capital repair project for public roads in Khorezm, according to the directive of the Cabinet of Ministers of the Republic of Uzbekistan No. 24/1-1744 dated August 15, 2017, is set for 2017-2022.

Predicted deadlines capital repairs design highways:

Preparatory works – 2023-2024;

Construction works:

- Construction of the roadbed, installation of artificial structures, paving - 2025-2027;
- Road structure development - 2027 year;
- Commissioning of the facility – 2027 year;
- Warranty period - until November 2029;

The main parameters of the design roads are presented in the table below:

Table 21 main parameters of the project road

No.	Name of the parameters	Ed . change .	Indicators	
1.	Administrative meaning	-	local	
2.	Highway category	-	III	IV
3.	Estimated speed	km /h	100	80
4.	Load on the single most loaded axle of the vehicle	kN / ts	100/10	
5.	Number of lanes	pcs .	2	
6.	Width of lanes	m	3.5	3.0
7.	Width of the roadway	m	7.0	6.0
8.	Width of the shoulder	m	2.5	0.5
9.	Width of the edge strip of the shoulder	m	0.5	
10.	Width of the roadbed	m	12.0 (10,0) 8.0	
11.	Cross slope of the roadway	‰	15	
12.	Cross slope of the shoulders	‰	40	
13.	Intersections and junctions	-	at one level	
14.	Type of pavement	-	Capital	
15.	Type of the surface	-	Asphalt concrete	

Roadbed

The widening and filling of the roadbed is carried out using soil brought to the highway by dump trucks from the quarry according to the volume of excavation work.

The main leading machines in the construction of the roadbed are a scraper, a bulldozer, an excavator with dump trucks and a roller. The need for earthmoving machines will be determined based on the volume of earthworks and the production rates of machines, vehicles, taking into account the distance of transportation of materials.

Artificial structures

Pipes

The project provides for dismantling the existing asbestos-cement and cast iron pipes. Instead of the dismantled pipes, it is envisaged to install round non-pressure reinforced concrete pipes of the following brands: RT5N-2.5 m; RT8N-2.5 m; RT10N-2.5 m.

It is also planned to extend existing reinforced concrete pipes of the same brands.

Reinforced concrete pipe structures d=0.5 m (RT5N-2.5); d=0.8 m (RT8N-2.5); d=1.0 m (RT10N-2.5)

Bridges

Based on the diagnostic survey of bridge crossings, the project provides for major repairs or complete replacement of the structure. There are 77 bridge crossings in total , including:

- repaired – 11 pcs ;
- newly constructed – 66 units.

Reconstruction of utility lines

Before the start of excavation work on the major repair sections of public roads of local importance in the Khorezm region with a length of 188 km, the project provides for the following works:

- on the installation of casings for utility lines;
- reconstruction of power transmission lines 0.4 kW; 0.6 kW; 10 kW;
- reorganization of communication lines.

Road paving

The project proposes 2 road surface design options for comparison:

Option 1. Involves dismantling (milling) the existing pavement using the material from the dismantling in the bases of the road surfaces being repaired.

Option 2. Involves cold recycling of the existing road surface with the addition of a binder (cement) and a stabilizing additive, compaction of the resulting mixture and the installation of a single-layer coating from a hot dense f/g a/c mixture.

Intersections and junctions

The project includes works on improvement of junctions (ramps). The radius of curvature of ramps is adopted depending on local conditions and existing development.

The width of the roadway of the ramps is assumed to be equal to the existing one. The volumes of work are taken into account on the area along the design length of the ramps.

The design of the road surface of the exits within the curves is identical to the design of the road surface of the main highway.

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c) reconstruction of engineering structures;

d) construction of the roadbed;

d) construction of road surfaces with surface drainage;

e) road conditions and equipment.

BASELINE DESCRIPTION

Introduction

278. This section presents the baseline of the project area under the following headings:

- Physical Environment
  - Climatic conditions
  - Soils
  - Water Resources
  - Geology, Topography and Seismicity
- Biological Environment
  - Flora
  - Fauna
  - Protected Areas & Habitats
- Social Environment
  - Administrative Structure
  - General Information on the RoK and Khorezm region
  - Socio-economic profile
  - Land use and Ownership
  - Vulnerable/Disadvanteged Group/Persons
  - Ethnicity & Language
  - Religion
  - Economy and Livelihoods
  - Cultural Heritage.

Karakalpakstan Republic

Physical Environment

Climatic conditions

280. The nature of The RoK (further Karakalpakstan), located in the desert zone of the Central Asian region, is defined by a sharply continental desert climate with extremely low precipitation and high evaporation. Most of the territory is occupied by deserts of Ustyurt and Kyzylkum. Between them is the drying Aral Sea and the delta of the Amudarya River, which, in turn, is separated by another desert(new) Aralkum.

281. The climate in Karakalpakstan is sharply continental with hot and dry summers and cold winters. The average temperature in January is -5 to -8 C. The minimum temperature in winter is -40 C. The average temperature in June reaches +26 to +28 C and maximum temperature reaches in July and August +46 C. The average rainfall is 100-110 mm per year.

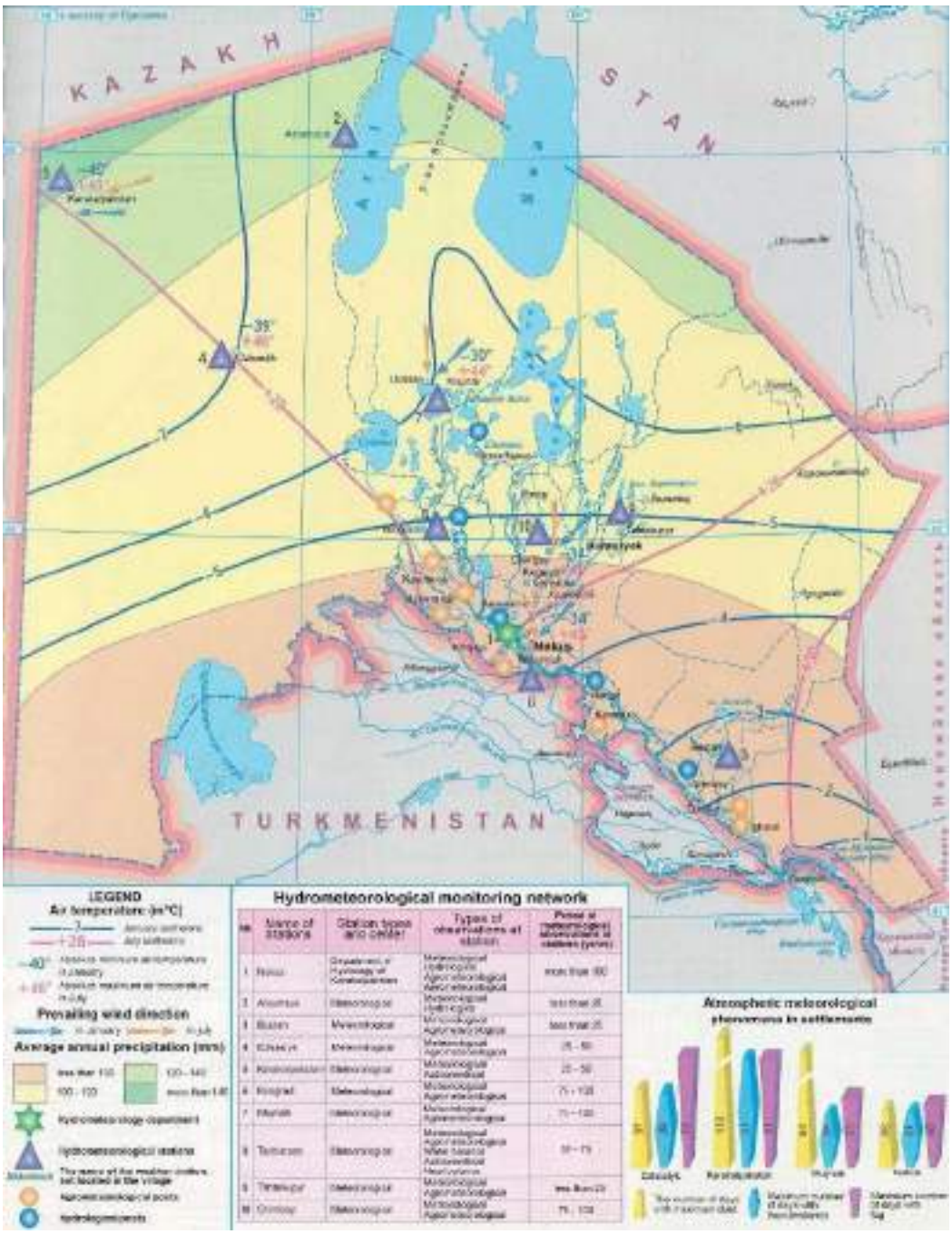


Figure 3 Climatic map of Karakalpakstan21

Soils

282. The RoK is located in the northwestern part of Uzbekistan, its area being estimated at 167,100 square kilometres or over 37 percent of Uzbekistan's entire territory. The territory of Karakalpakstan can be conditionally divided into 4 geographical districts: Karakalpak part of the Ustyurt, Karakalpak part of the Kyzyl Kum, lower reaches of Amudarya, and relatively newly emerged solonchak sands of the Aral Sea.

283. Karakalpakstan has a wide range of soils, from sandy soils of the deserts with hummocky and barkhan sands to marshy soils of the floodplain forests in Amudarya

21 Atlas, Published by Yergoedezkadastr, 2016

mouth. Karakalpakstan's soils are characterized by different salinity degrees and are subdivided into non-saline, weakly saline and highlysaline (salt content of more than 0.5 g per 100 cm3 of soil).

284. Boggy floodplain-and-alluvial soils occupy narrow bands around the lakes and in the topographiclows with meadow-and-bog vegetation. Most of the year, these soils are water- logged. By the texture,there are various soils: sandy, clayey, loamy, ever-stratified. Meadow soils are most widespread in theterritory of Karakalpakstan. Depending on water regime, they can be divided into two types: meadow floodplain-and-alluvial and meadow residualand-marshy. The drying out part of the floodplain is predominated by the humus-rich mildly saline option. Sulphates predominate in the salts composition.

285. In addition to the above, clean sandy soils, i.e. sands, also occur in Karakalpakstan's territory. Thesands of the Northwestern Kyzyl Kum emerged as a result of aeolian reprocessing of alluvium, and those in the region of Sultan Wa'is Taui upland and southeastern Aral seaboard – as a result of bedrockweathering.

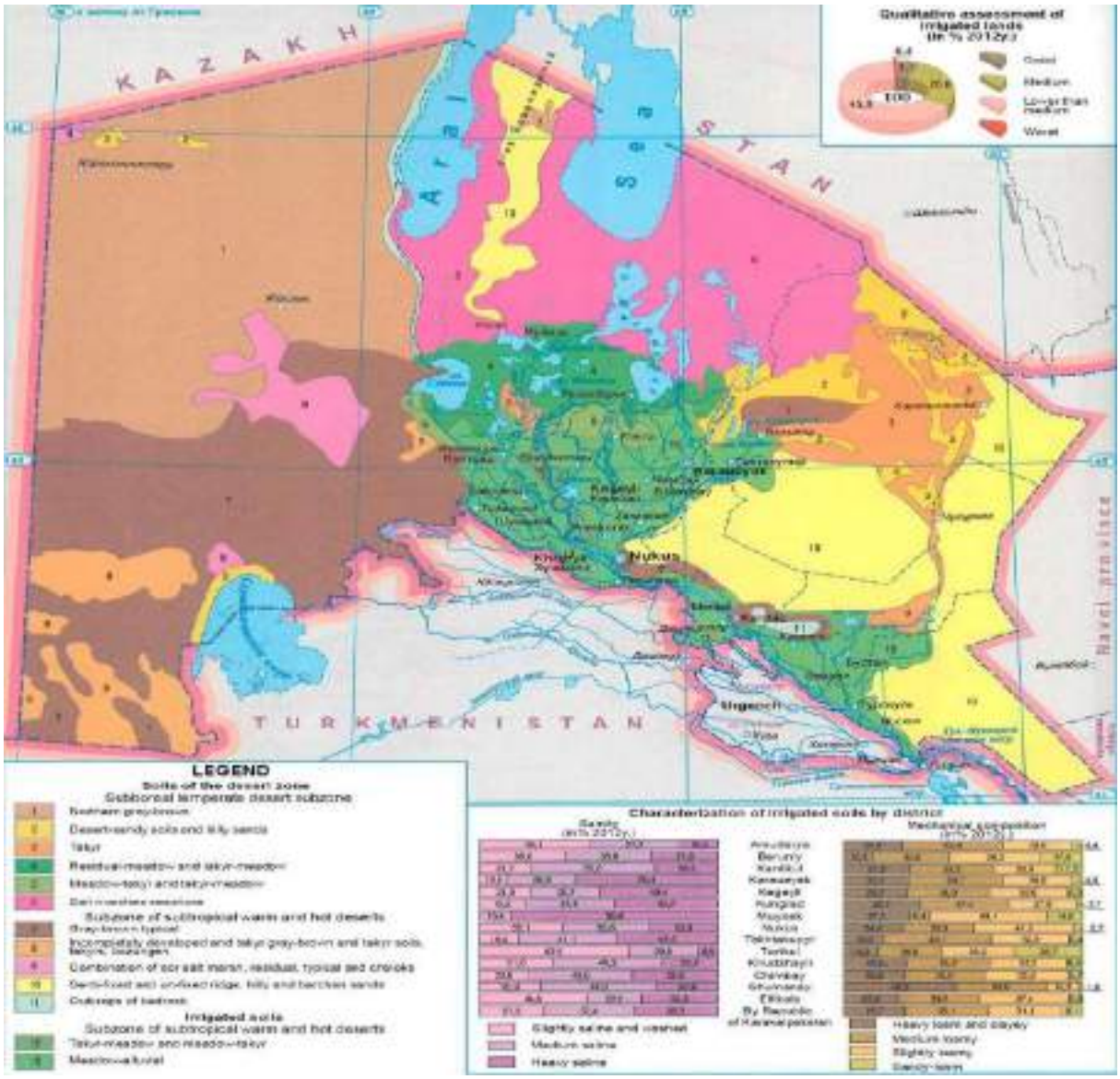


Figure 4 Soil map of Karakalpakstan

Water Resources

Surface Water Resources

286. The main water bodies near the project area are the Amudarya River and Lake Akchaku

287.

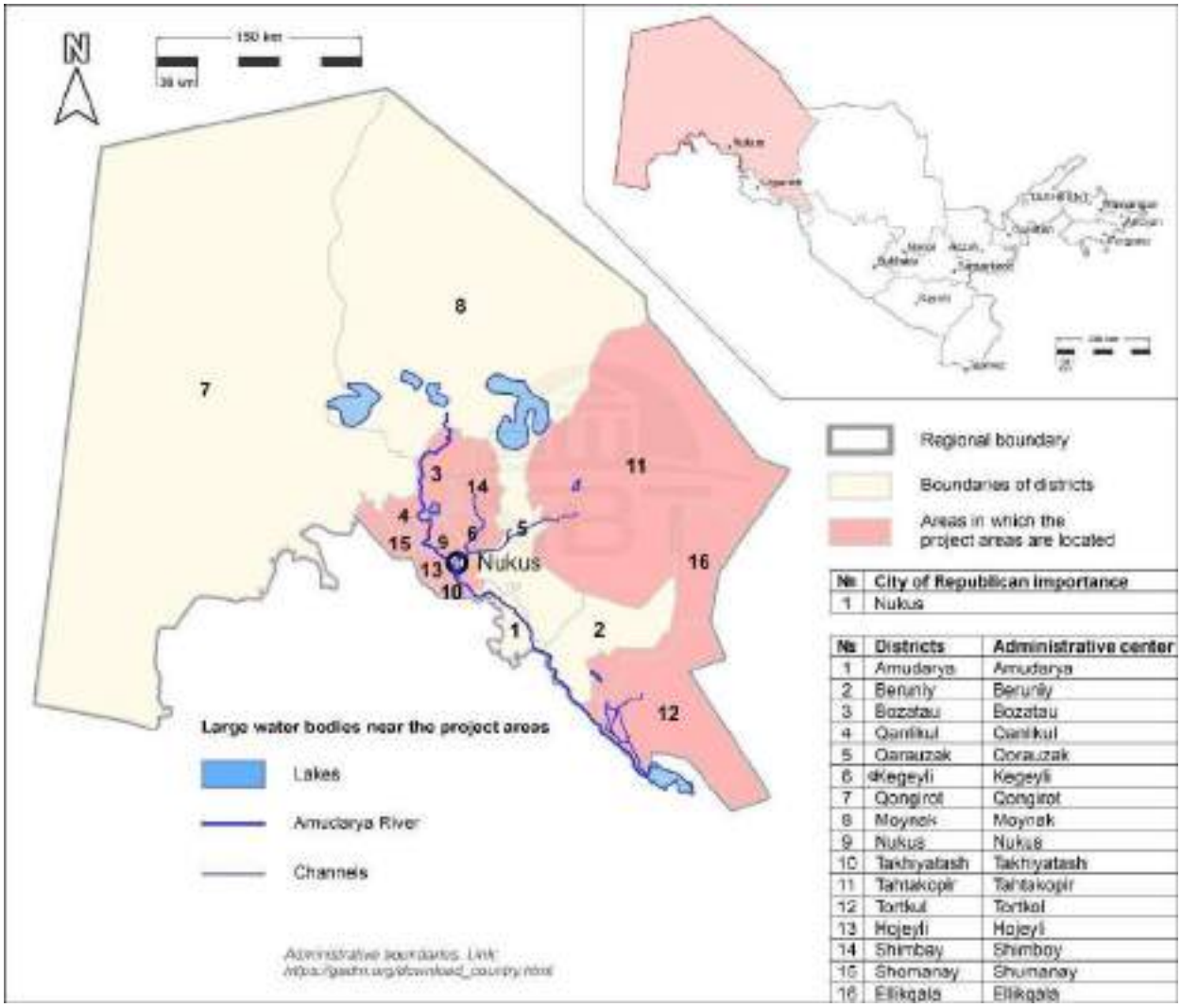


Figure 5 Main water bodies near the project area

Lake Akchakul

288. Akchakul is located in the north-west of the Ellikkalla district. The total area is 1149 hectares. Thedepth locally reaches 35 meters. On the initiative of the President of Uzbekistan Shavkat Mirziyoyev, Akchakul was designated a tourist and recreational zone, and large-scale work was carried out. All conditions for recreation are created for local and foreign tourists.

Amudarya

289. The Amudarya is the longest river in Central Asia: 2,540 km from the sources of the Pyandj and Vakhandarya rivers in the Pamir Mountains or 1,415 km directly from the confluence of the Vakhsh and Pyandj. Known in the Hellenistic world as the Ox, and in Arabic as Jeyhun, since ancient times theAmudarya was not only a source of irrigation of vast arid areas, that is, a source of life, but also a transport artery. In modern conditions, the irrigation network in the basins of the right-bank tributariesof the Amudarya, Surkhandarya, Sherabad, Kashkadarya, and the Amudarya itself within Uzbekistan includes large and small irrigation canals, many collectors and springs (mainly in Sherabad basin).

290. The Amudarya is partially a regulated river. In the upstream there is the Nurek dam on the Vaksh River, which is currently run mainly for all-the-year-round production of hydroelectric power. The Tuyamuyun dam in the upper delta of the Amudarya provides inter-seasonal storage of water, and the Takhiatash dam located to the north provides gravity distribution of water for irrigation of lands bordering the Sub-Aral area.

291. The flow of the Amudarya is regularized by means of a complex of reservoirs (Channel, Tuyamuyun, Kaparas, Sutansanjar and Koshbulak reservoirs) impounded with four main dams completed between 1981 in 1983 in Tuyamuyun, some 300 km upstream of the former geographical boundaries of the Aral Sea and extending over the territories of Uzbekistan and Turkmenistan. Based on planning, the reservoir complex is used to regularize the flow of the Amudarya mainly for agriculture (98%), and partly for industry and drinking water supply (up to 2%).

Ground Water Resources

292. In accordance with data provided by Aral Hydrogeological Expedition, there are four recognized groundwater aquifers in Karakalpakstan: i) the lower Amudarya aquifer, extending in both right and left bank of the Amudarya; ii) the Karakalpak aquifer in the left bank of the River; iii) the Khorezm aquifer; and iv) the Turtkul aquifer.

293. Generally, groundwater in RK is salinized due to the high salinization of the groundwater bearing sediments. Shallow aquifers of generally limited extension are found within old alluvial River channels, constituted by alluvial sediments and recharged mainly by water seepages from irrigation canals. Due to the recharge of surface water from canals, which generally exhibits moderate mineralization content, these lenses of groundwater can be exploited for local water supplies. The exploitable reserves of these aquifers are limited in quantity due to the limited and variable recharge and also in time due to the upcoming invasion of salinized groundwater from the peripheral zones of the lenses of fresh groundwater. This is why the term “fresh groundwater” is commonly used in the hydrogeological context of the lower Amudarya area to identify groundwater bearing units or even small extension with a total dissolved solids (TDS) concentration in water up to 1.5 g/l16. These groundwater lenses are generally exploited by means of small discharge wells for the supply of remote settlements, and in amounts carefully planned in order to relent as much as possible the diffusion of the surrounding salinized groundwater.

294. Regarding the hydraulic regime of water use and quality in the canals can be distinguished into three different periods in the year.

295. The period of recharge, from December to May, during which TDS in surface waters averages 1.2to 1.7 g/l, with peaks up to 2.3 g/l. In December-January the irrigation canals flow full and recharge groundwater with rather salinized water. From mid-January to midMarch the water in the canals is

generally frozen while a baseflow is maintained in the canals bottoms by drainage of groundwater. From March to end of May the canals are flowing again and supplied with not conditioned water.

296. During the vegetative period, June to September, the salinity of water in canals decreases to 1 g/l. During the regression period, between October and November, flow in canals falls to minimum annual discharges generally sustained only by the baseflow contributed by groundwater; the TDS averages 1.2 g/l.

297. The analysis of several years of monitoring indicate that shallow aquifers are recharged by main canals during the 3 to 4 months high waters period. During the 3 to 4 months recession period flow in canals is generally sustained by drainage of groundwater.

The Lower Amudarya – Right and Left Bank - Aquifer

298. Surveys carried out at different stages in time revealed a total of 24 groundwater bearing lenses with quality acceptable for water supply. The estimated renewable reserves in the northern Karakalpakstan amounted to 199,590 m3/day including 156,140 m3/day categorized for industrial use. Effective withdrawals as of 01.01.1994 were assessed at 37,600 m3/day.

299. As of 01.01.2005, intakes were reduced to 8,340 m3/day produced from 38 wells. Degradation of water quality was the reason for such reduction. In the last 35 years, due to increasing of water withdrawals from the Amudarya and to the return of drainage waters into the River, the overall quality of surface waters degraded steadily while reserves of fresh groundwater decreases accordingly.

Alluvial Deposits in Right Bank of the Amudarya

300. The Nukus aquifer is located along the channel “Kyzketken” and is constituted by sediments of upper Cretaceous period. It has a length of 7 km and width from 800 m to 3 km. At the time of the first survey in 1965, the TDS in groundwater ranged 0.5-0.75 g/l. Surveys in 1990 showed that reserves of fresh water had decreased by 10% due to poor recharge occurring from the canal. Renewable reserves were assessed at 16,800 m3/d (194.4 l/s) and approved by the State Committee of USSR of Mineral Resources in 1965 for industrial use. The exploitable reserves were estimated at 2.41 m3/day or 27.9 l/s. Part of the city of Nukus was supplied with water from this aquifer.

301. In 2005 the salinity of groundwater was in the still acceptable range of 1-1.5 g/l for water supply. However, the production wells are not operated due to high fluorine content.

Khorezm Aquifer (RoK)

302. This aquifer is located in the Amudarya district, in the RoK, on the left bank of the Amudarya. The perimeter of the aquifer is bound by the Amudarya River, the Kara-Kum desert and the national borderline with Turkmenistan. Medium and lower Neogene sediments are a local aquitard at depth of 25-100 m. Their lithological composition is constituted by clays, siltstones with interbedded sandstone layers. Pliocene sandstones with thickness ranging 20 to 30 m are found everywhere at depths of 17 to 35m. 161. The groundwater bearing unit Beruniy is also, located on the right bank of the Amudarya, 5 km south-west from Beruniy city, in the Beruniy district. In 1982 State Reserves Committee of Soviet Union approved exploitation of reserves of fresh ground waters responding to requirements for industrial categories in the amount of 12,800 m3/d (148 l/s).

303. There are several types of ground water in the project area. Shallow ground water, which is located on the level up to 20 meters from surface, deep ground water,

which in some cases could be used for drinking purposes and aquifer where ground water is located below 100 up to 250 meters. Water from these aquifers is used for drinking purposes only. The below description of ground water table in the project districts have been prepared based on the official conclusion received from the Ministry of Mines and Geology of the RUz SUE “Uzbekhydrogeology” Aral Sea hydrogeological expedition (2023)

304. Groundwater regime in the virgin and adyr areas of the Left Bank of the river. The depth of groundwater levels near irrigated areas ranges from 2.0-2.5 to 3.0-3.5 m and 5.0-5.5 to 6.0-9.4 m awayfrom irrigated areas.

305. On the massifs of the predominant cultivation of rice crops, which cover the territories of the Shumanai (along the Amudarya River) region, the maximum level of groundwater in the seasonal section occurs, in August, 0.92-1.84 m, and the minimum, at depths of 4.0-5.95 m above the ground inNovember-December. The minimum level in the territory of Kanlykul, Kungrad regions is noted at a depth of 3.6-4,2 м, and in the Muynak region at 7.0-7.2 m.

306. On these arrays, the groundwater level in 2018-19 lay in the range from 5.9m to 7.4m with an amplitude of fluctuations of 1.0-1.5m, an increase in the level of groundwater was observed, from March to May in the month of 2021-22, a decrease in the level of groundwater which continues until the end of the year within 8.02-8.21m

307. On the arrays, the traditional predominance of cotton crops (the territory of the Sarykamysh deltaof the Amudarya River), where the territories of the Kanlykul, Kungrad and Muynak administrative regions are located, for the observation period of 2018-2021, the maximum level of groundwater is noted in May - August at a depth of 0.6 - 1,5 m during the period of water-charging irrigation and vegetation irrigation of winter crops. The minimum groundwater level occurred in late October and early November at a depth of 3.5- 4,2 m from the earth's surface.

308. The amplitude of groundwater level fluctuations was 2.7 - 3,0 м depending on the water content of the year. It should be noted that only from September to mid-November, all channels are closed, andwater supply to irrigated lands stops completely. From the second half of November, autumn-winter leaching irrigations begin, which continue in the spring of the next year - spring leaching water-charging irrigations.

309. For the observation period 2018-2022. due to a change in the structure of crops, i.e. with the increase in winter crops, the time of the onset of maximum groundwater levels changed to March-Aprilin 2019 and was noted at depths of 0.95-1.8 m from the earth's surface. The timing of the onset of minimum groundwater levels remained unchanged. The average annual levels of groundwater in the long-term context have a downward trend due to the above factors.

310. An exception to the rule is the lands located in the middle and tail parts of the main canals Suenli and Shumanai, where in the dry season of 2020-2021. average monthly groundwater levels decreased from 2.0 - 2.63 m to 3.7 - 5.04 m, respectively.

311. In the period following the low-water high-water period, groundwater levels on these lands intensively recovered at a rate of rise of 0.5-3.0 m/year, depending on the intensity of irrigation of cultivated crops

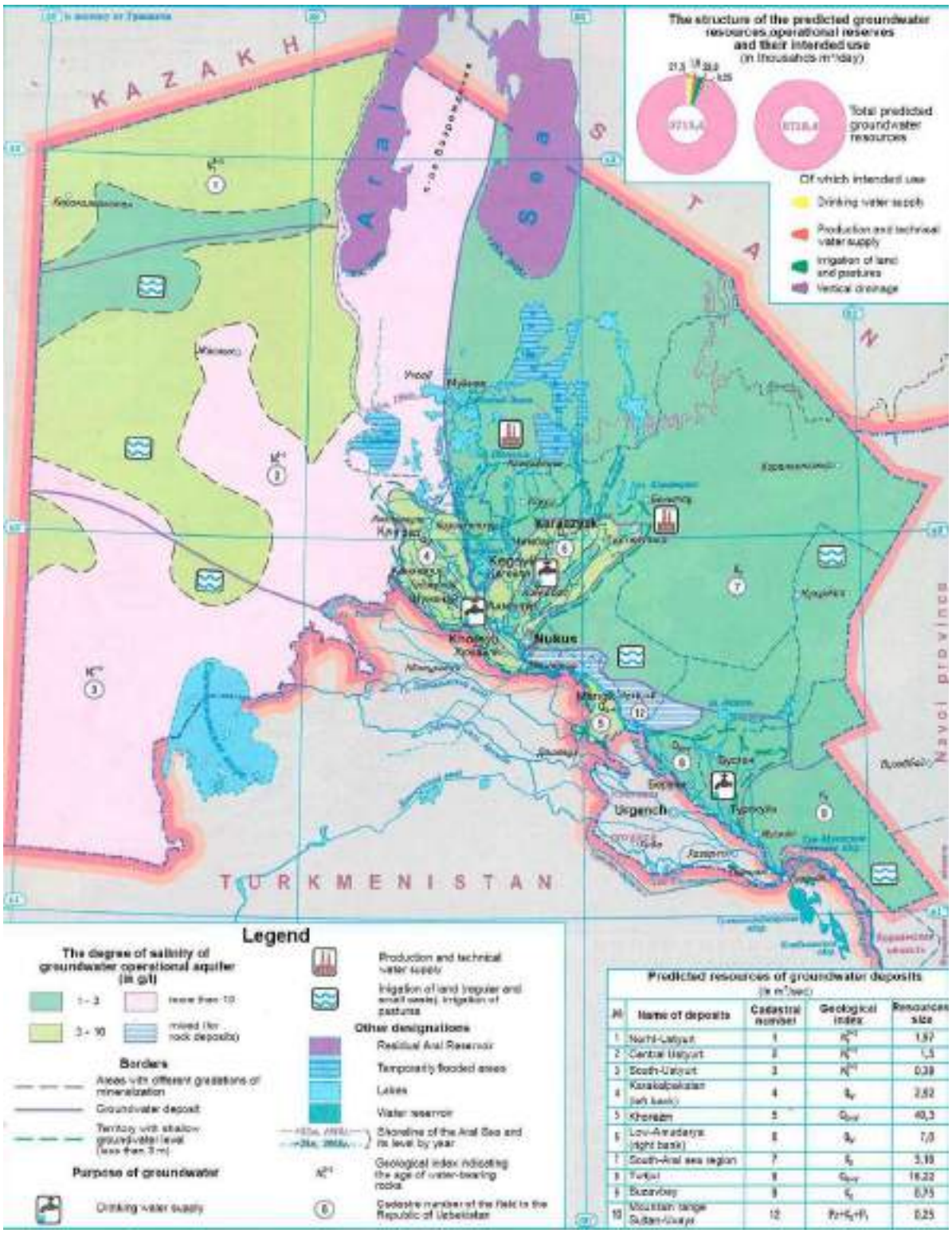


Figure 6 Map of ground water of the Karakalpakstan

Geology, Topography and Seismicity

312. The territory of the RoK is a plain with clearly defined small enclosed depressions and a general slope to the north, northwest and southwest. In the southern part of the territory there is a low mountain range Sultanuizdag, and in the north - small hills Kushkanatau and Beltau. In the north-west of Karakalpakstan is the eastern part of the Ustyurt plateau, which is a waterless, deserted clay plain, which in the delta of the Amudarya and near the Aral Sea breaks a 100-110 m high ledge. In the peripheral are as of the left-bank part of the delta, as well as near its border with

the Kyzylkum, the relief of the plain is somewhat hilly, with sands overhanging the cultivated lands. Muddy-hilly sands with heights of 5 to 10 m and more are found in separate massifs among irrigated areas.

313. The geological structure of the Amudarya delta in Karakalpakstan consists of many types and typesof deposits of Cretaceous, Tertiary and Quaternary periods. Cretaceous deposits take place on the rightbank of the river. Tertiary deposits are found near Tyuyamuyun, Kyzylkum, Ustyurt and other areas inthe form of red and red-yellow clay deposits. Quaternary sediments are widespread in the present and emerging delta of the Amudarya River and consist of sands, sandy loam, loams and clays brought in bywater. These sediments have relatively good water permeability, friable structure, unstable to spillage processes. Quaternary sediments are the object of amelioration, groundwater and its regime are formedin them. The complexity of the geological structure of the Amudarya delta, the presence and economicuse of irrigated land in the delta determine the features of its hydrogeological conditions of formation of the groundwater regime.

314. According to seismic zoning, the territory of the project zone belongs to the 7-point zone(**Figure 7**).

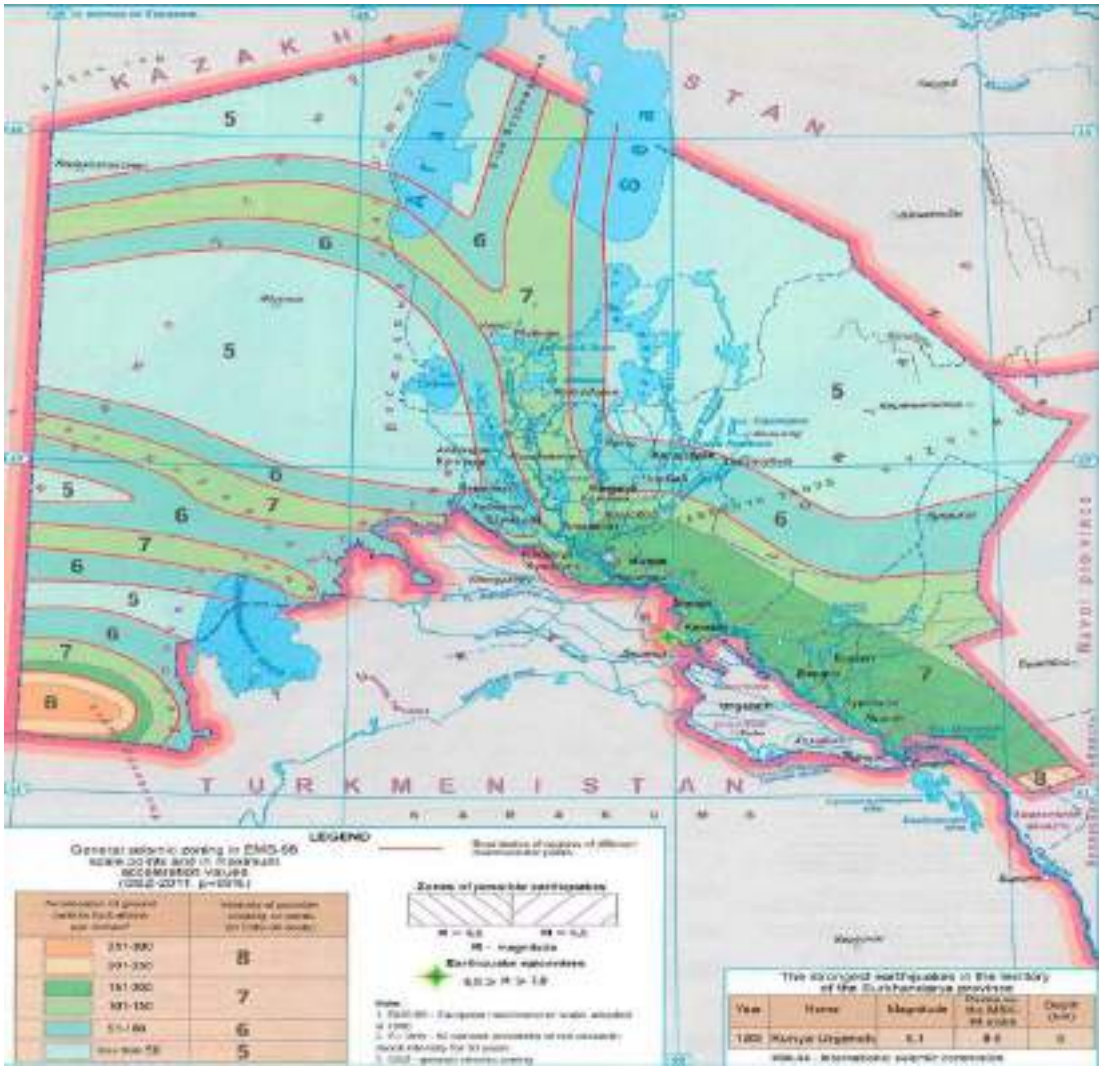


Figure 7 Seismic map of Karakalpakstan

Biodiversity

315. Individual peculiarity of the nature of Karakalpakstan located in a desert zone of the Central Asianregion is defined by extremely continental, desert climate with

extremely small amount of precipitation given large evaporation rate. A large part of the territory is occupied by the deserts of Ustyurt plateau and Kyzyl Kum. The drying Aral Sea and Amudarya river delta intervene between them and are, in their turn, divided by another (new) desert named Aral Kum.

316. The flora and fauna of the deserts reveal their adaptation to rather unfavourable ambient conditions.

Fauna

317. The deserts' vegetative cover sharply changes depending on the substrate: psammophytic vegetation commands the sands, gypsophyte vegetation – the rocky substratum, halophytic vegetation– the solochak soils, and sagebrush and sagebrushand-saltwort and ephemeral vegetation – the loamy soils.

318. Overall, the flora of the Aral Sea's desiccated floor is characterized by a small number of species. Only a small portion of the dried-up part of the Aral Sea floor is occupied by sparse desert vegetation. Biyurgun [anabasis salsa/eriopoda] and keyreuk [salsola orientalis] communities form the basis of the vegetation.

319. Black saxaul, kuyandyk, kandym, [calligonum junceum], and stipa are found in the sand. However, a considerable part of the Aral Kum is represented by wet solonchaks at places where bays were formerly located, as well as by sandy-clayey solonchaks. This territory is barren of flora and fauna. The surface is normally armoured with up to 5 cm thick salt crusts.

320. The Kyzyl Kum desert in the northwest has merged with the new desert of Aral Kum composed of the entire territory of the string of islands ranging from Muynak Upland (Tokmok Ata island) in the south up to Kulandy peninsula in the north: these are the former islands of Lazarev, Konstantin, Vozrozhdeniya [Renaissance], Komsomolsky, and the 'banks [shoals]' of Bellingshausen, Komsomolskaya, and Beninga.

321. Of Karakalpakstan's wild flora (a little over a thousand species), about 700 species are in the Kyzyl Kum. They are represented by typical desert life forms. Herbaceous plants (representatives of the families goosefoot, buckwheat, and composite) account for more than half of them, bushes – just under a quarter of the species, and semishrubs and dwarf semishrubs – the remaining portion.

322. The valley and delta of Amudarya, like those of other Central Asian rivers, are characterized by individually peculiar tugai [riparian woodland] landscape. Tugais are tree and shrubbery forests, development of which is ensured by optimal soil moistening conditions due to river water overflows and high groundwater level. They grow linearly along the river banks, islands, and the lowland topographic lows. In its most typical form, a tugai represents a dense, heavy-going thicket of turanga [Asiatic/Euphrates poplar], willow, and oleaster that are enlaced with lianas, and large shrubs - tamarisk, and chingil [salt tree]. While, in damp habitat areas there is a mass of common reeds [phragmites australis] and kendir [dogbane] amid the trees.

323. The tugais of Amudarya's lower reaches currently feed 61 species of tugai plants. Of which, the main group of tugai plants includes turanga [Asiatic/Euphrates poplar], willow (5 species), oleaster (1 species), tamarisk, chingil [salt tree], clematis, vincetoxicum, and glycyrrhiza. The tugais' shrub zone is mainly represented by species associated with permanent ground moistening and the process of salinization. These are tamarisk, ajiriq [cynodon dactylon], atriplex, zygophyllum, kermek [limonium], aqbash [karelinia], qarabaraq [halostachys], and various salsolas.

Flora

324. The desert's animals also adjust to excessive heat and moisture shortage in a number of ways. Some of them shift to nocturnal way of life and escape from the day heat hiding in holes or burrowing in the sand or sitting out on the bush branches. What water shortage in the desert has led to is that some desert animals do not drink water at all and do not even know how to drink (yellow ground squirrel). They obtain the necessary moisture from plants, and predators – from their preys' blood. The animals of ephemeral deserts that lead strenuous life in the spring go into aestivation during the hot summer period.

325. The RoK records 498 vertebrate species spread over its territory, including 68 mammals, 307 birds (of which, 141 breeding, 20 wintering, and 14 migratory birds), 33 reptiles, 2 amphibians, and 49 fish species. There is roughly 7 times as many invertebrate animals, but they have been very poorly studied. Insects are the most diverse – 1,392 species that fall into 23 orders. Other invertebrates – the parasites of fish, birds, crustaceans, and shellfish are the most fully investigated. Thus, the fish are known to have 436 parasite species, the birds – 133 helminth species alone. 45 flea species and 16 mite species have been found on rodents. The tugai biocoenosis records 420 invertebrate species, 264 – in gypsum desert, and 180 – in sandy desert.

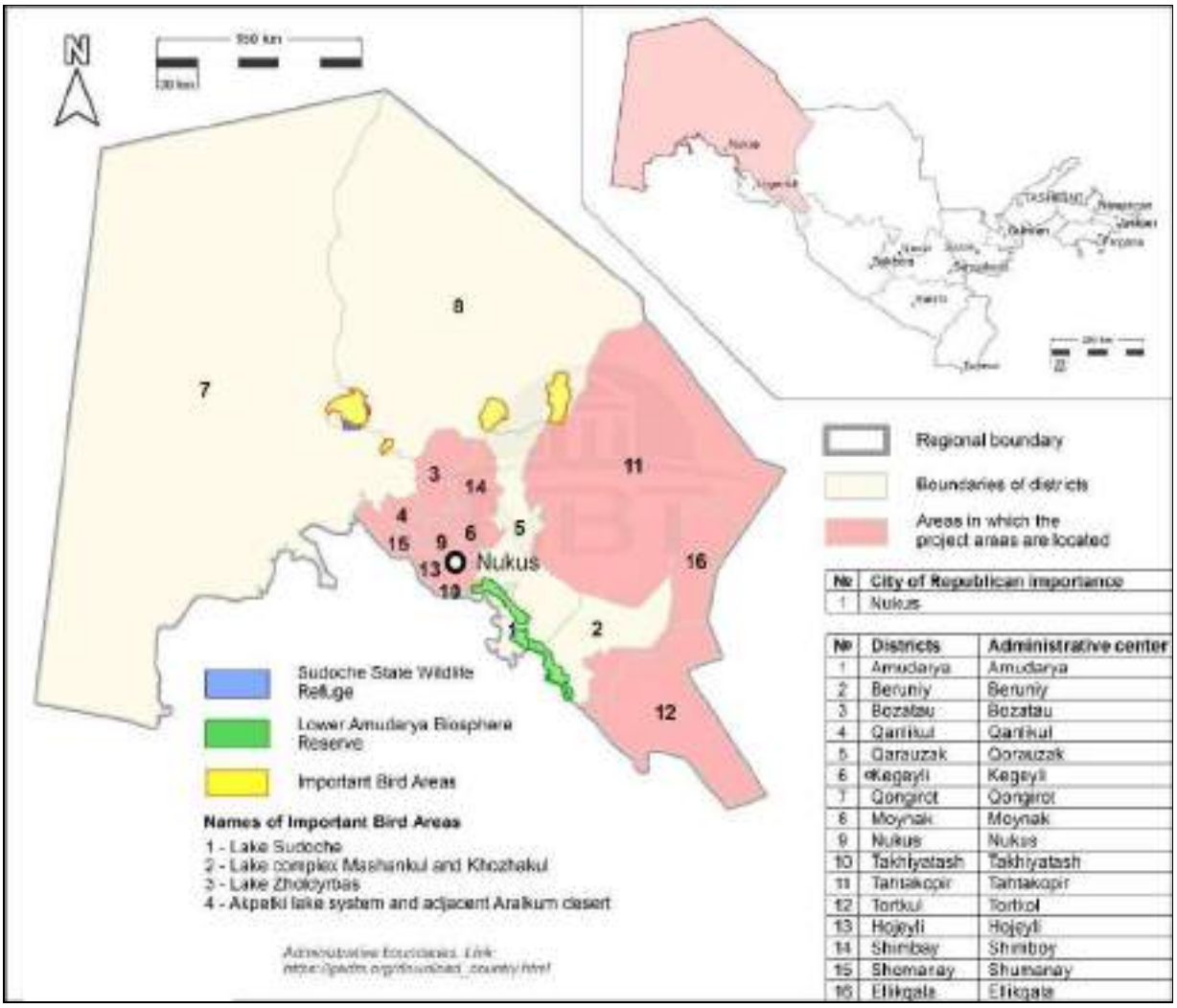
326. Species composition of Karakalpakstan's vertebrate animals has undergone noticeable changes in recent decades. A considerable part of the terrestrial species has greatly reduced in number and is now listed as vulnerable, rare or endangered. Uzbekistan's Red Book (2006) includes 10 species of mammals, 37 – birds, 12 – fish, and 4 – reptiles. Of Karakalpakstan's mammals, the Red List of the International Union for Conservation of Nature (IUCN) includes 2 extinct (Asiatic cheetah and Turanian tiger) and 4 critically endangered species (Indian ratel, Turkmenistan caracal [caracal Schmitzi], Turkmenian kulan, Ustyurt mountain sheep); of its birds – 5 endangered and critically endangered species (marbled duck, stiff-tailed duck, Asiatic white crane, bustard, slender-billed curlew), and of its fish – 5 species (Aral bastard sturgeon, large and small Amudarya false shovelnose sturgeon, Aral spined loach [sabanejewia aurata aralensis], and Aral Sea trout).

327. At the same time, 14 fish species have emerged in Karakalpakstan's water bodies as a result of acclimatization activities and the fish resettlement. However, only 4 of them are of commercial importance and even take the lead in fishery.

328. Almost all of the indigenous fish inhabiting Amudarya's plain areas are suppressed endemics of the Aral Basin. All sturgeons are on the verge of extinction: Amudarya's relict endemics – large and small Amudarya shovelnose, and bastard sturgeons. Just as all sturgeons of the world fauna, these three species are globally protected. They were included in the Red List of the International Union for Conservation of Nature and in Uzbekistan's Red Book (2006). A total of 15 species and subspecies of the Amudarya Basin fish were listed in Uzbekistan's Red Book (2006). Along with that, Amudarya's role is also important as a transit canal for breeding of such commercial fish in the riverbed as silver carp, grass carp, white Amur bream, and their juveniles migrating downstream from the spawning grounds to the delta zone lakes.

Figure 8 Wildlife Map of Karakalpakstan

Protected Areas & Habit



№	City of Republican importance
1	Nukus

№	Districts	Administrative center
1	Amudarya	Amudarya
2	Beruniy	Beruniy
3	Bozatau	Bozatau
4	Qanlikul	Qanlikul
5	Qarauzak	Qarauzak
6	Kegayli	Kegayli
7	Qongirot	Qongirot
8	Moynak	Moynak
9	Nukus	Nukus
10	Takhtyatash	Takhtyatash
11	Tamakopir	Tamakopir
12	Tortkul	Tortkol
13	Hojeyli	Hojeyli
14	Shimbay	Shimboy
15	Shumanay	Shumanay
16	Elikgala	Elikgala

Figure 9 Main protected areas closed to the project territories

329. Within Karakalpakstan there are several protected areas and the closest to the project sites is the **Low-Amudarya Biosphere Rserve (LARB)**.

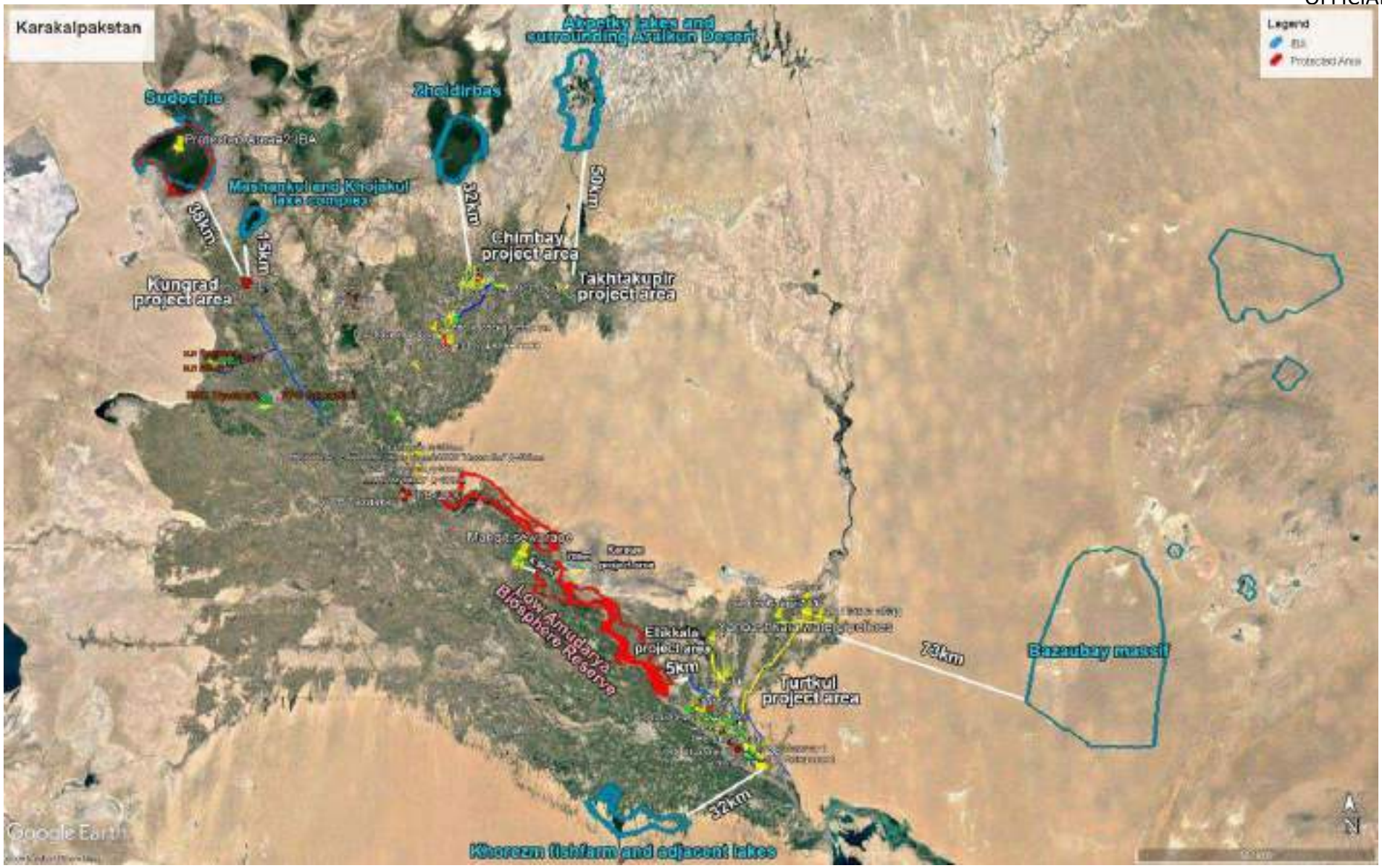


Figure 10 Location of IBAs closed to the project areas

330. **Low-Amudarya state Biosphere Reserve (LABR)**. 22The LABR was created in 2011 under a joint project of the United Nations Development Program, the Global Environment Facility and the Government of the RoK "Conservation of riparian forests of Karakalpakstan in the Amudarya river Delta" based on the reserve "Baday-Tugay". In addition to the territory of the former reserve, tugai forests of Beruni and Amudarya districts of Karakalpakstan were transferred to the biosphere reserve.

331. The total area of the LABR is 68717.8 ha. It is located in the lower reaches of the Amudarya riveron its right bank. From the south it is washed by the Amudarya river and borders with the tugai forest of Tallyk, and from the north and north-west it is surrounded by a tributary of the Amudarya - Kokdarya.The territory of the LABR is divided into three functional zones; reserved, buffer, and transitional.

Khorezm Region

Physical Environment

332. Horezm Oblast (HO), is a viloyat (region) of Uzbekistan located in the north-west of the country (**Error! Reference source not found.**11), in the lower reaches of the Amu Darya river. It borders Turkmenistan to the south and west, Kazakhstan to the north and Bukhara oblast to the east. HO is one of the smallest regions of Uzbekistan, occupying an area of 6,312 sq km (1.5% of the total territory of the country). The region is located between 40° and 42° north latitude and 60° and 62° east longitude. The area extends from north-west to south-east for 280 km and from west to east for 80 km near Urgench.

333. HO refers to the southern part of the Aral Sea region ("Priaralye") , an area adjacent to the Aral Sea. Since the second half of the 20th century, the Aral Sea region has been affected by the Aral Sea crisis - the drying up and destruction of the Aral Sea ecosystem caused by the growing mindless and uncontrolled water diversion from the Amu Darya and Syr Darya rivers to irrigate the monoculture fields - cotton, to a lesser extent, rice. Since the early 1990s, a new desert, Aralkum, has been formed in place of the drying Aral Sea, and the Amu Darya is actually "dissolved" in the deltaic water bodies of the southern Aral Sea region, not reaching the dried up part of the sea.

334. The territory of the region is located in the lower reaches of the Amu Darya river, within a vast plain surrounded by the arid deserts of Kyzylkum and Karakum to the east, south, south-west and north-west by the Ustyurt Plateau.

22 http://tugai.uz/

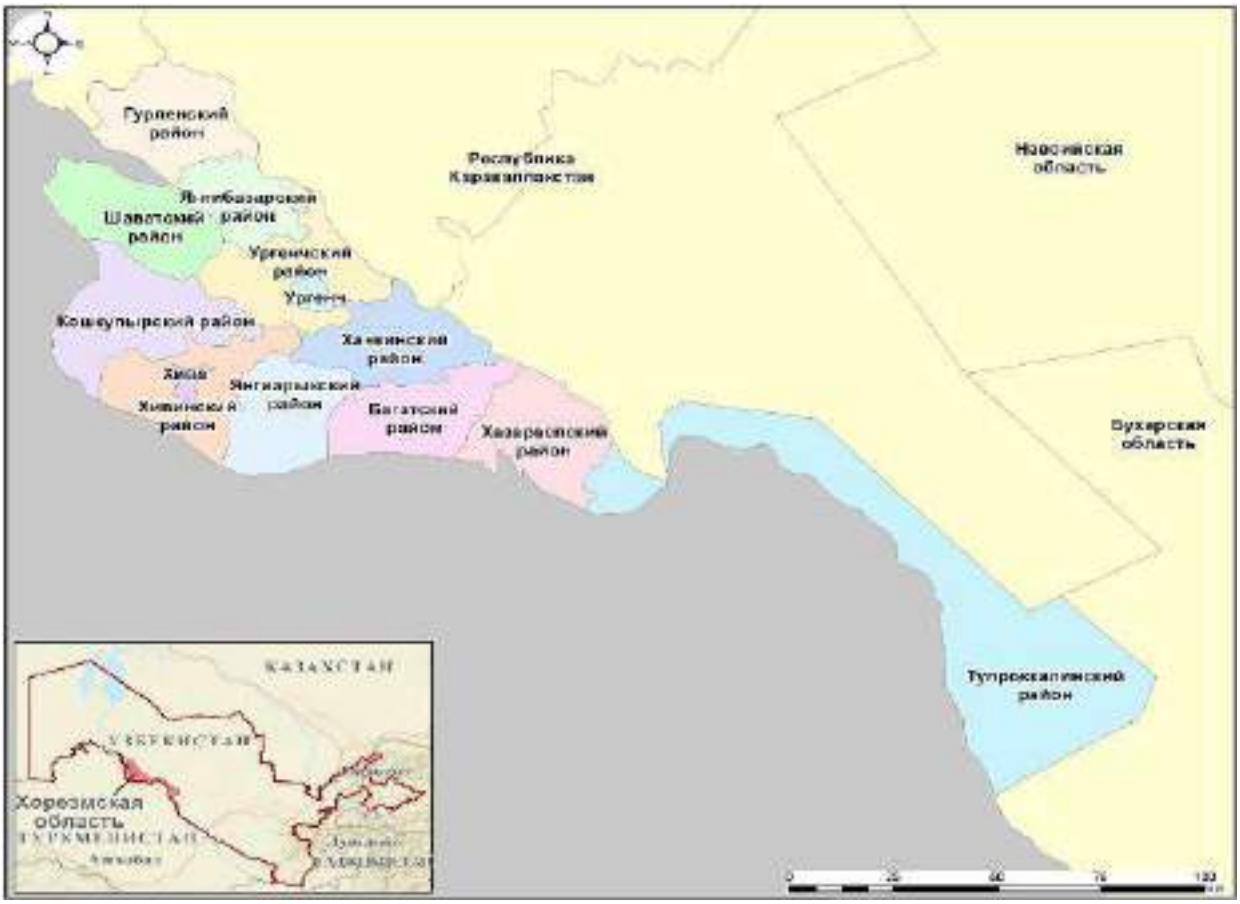


Figure 11 Geographical location of Khorezm Province

335. The region's area is 6,100 km², or 1.4% of the entire Uzbekistan's area. The administrative centres of the province is Urgench.

Climate

336. Khorezm Province has a mid-latitude desert climate with hot and dry summers and relatively cold winters. This type of climate is classified as BWk under the Köppen climate classification. 23The climate conditions of the Project area largely depend on the surrounding deserts, including Karakum Desert, Kyzylkum Desert, and Usturt Plateau Desert. Another desert in the area, the Aralkum Desert, developed on the former seabed once occupied by the Aral Sea and is the source of airborne salt and dust contaminated with agricultural pesticides being carried over from the former seabed to the Khorezm oases and globally.

337. The mean annual temperature in the province is 12-14ºC, 0.92% higher than Uzbekistan's averages. The mean summer temperature in July is 32°C to 36°C, with a maximum of 51

338. °C. In winter, the average air temperature is 0 °C to -10 °C in January, lower by 5-8 °C compared to the rest of Uzbekistan's southern and eastern parts.

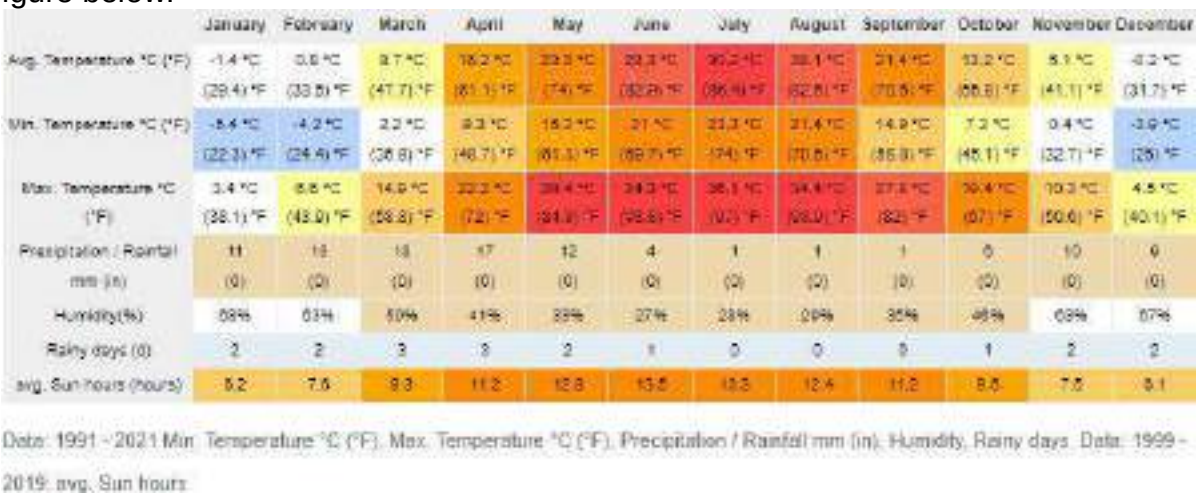
339. Precipitation is uneven within the province. The average annual precipitation across the province ranges from 78 mm to 103 mm. The highest amount of rainfall is in spring and autumn. The region has 22.86 rainy days (6.26% of the time) annually.

340. Considering the desert climate, the wind direction mainly depends on the area's mountainous terrain. In winter, the prevailing wind is south-easterly with the velocity of 3-5 m/s, while during the summer the wind is mainly north-westerly reaching the speed of 2-

23 https://koeppen-geiger.vu-wien.ac.at/present.htm

4 m/s.

341. A summary of average weather by month recorded during 1991-2022 is provided in the figure below.



	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C (°F)	-1.4 °C (29.4) °F	0.6 °C (33.0) °F	9.7 °C (47.7) °F	16.2 °C (61.1) °F	23.0 °C (74) °F	29.3 °C (85) °F	30.2 °C (86.4) °F	28.1 °C (82.6) °F	21.4 °C (70.5) °F	13.2 °C (55.8) °F	5.1 °C (41.1) °F	-0.2 °C (31.7) °F
Min. Temperature °C (°F)	-5.4 °C (22.3) °F	-4.2 °C (24.4) °F	2.2 °C (36.0) °F	8.3 °C (46.7) °F	16.2 °C (61.1) °F	21 °C (69.7) °F	23.3 °C (74) °F	21.4 °C (70.5) °F	14.9 °C (58.8) °F	7.2 °C (45.1) °F	0.4 °C (32.7) °F	-3.9 °C (25) °F
Max. Temperature °C (°F)	3.4 °C (38.1) °F	6.6 °C (43.9) °F	14.9 °C (58.8) °F	22.2 °C (72) °F	29.4 °C (84.9) °F	34.3 °C (93.8) °F	36.1 °C (97) °F	34.4 °C (94.0) °F	27.5 °C (82) °F	19.4 °C (67) °F	10.3 °C (50.6) °F	4.5 °C (40.1) °F
Precipitation / Rainfall mm (in)	11 (0)	10 (0)	18 (0)	17 (0)	12 (0)	4 (0)	1 (0)	1 (0)	1 (0)	6 (0)	10 (0)	9 (0)
Humidity(%)	68%	63%	50%	41%	33%	27%	23%	29%	35%	48%	63%	67%
Rainy days (d)	2	2	3	3	2	1	0	0	0	1	2	2
avg. Sun hours (hours)	5.2	7.6	9.3	11.2	12.8	13.6	13.5	12.4	11.2	8.6	7.5	5.1

Data: 1991 - 2021 Min. Temperature °C (°F), Max. Temperature °C (°F), Precipitation / Rainfall mm (in), Humidity, Rainy days. Data: 1999 - 2019: avg. Sun hours

Figure 12 Average weather by month (1991-2021), Khorezm Province (Source: Weather and Climate Data)24

Topography

342. The province is located along the Amudarya River and between two deserts such as Karakum Desert and Kyzylkum Desert. The average height of the Khorezm Province is about 100 m above the sea level. The terrain of the area is mostly flat. It has a general surface slope from east to northwest, with absolute elevations varying from 92 to 116 m (shown as red circles in the figure below). The province is crossed by small rivers and a number of irrigation and drainage collector canals, illustrated as blue lines in the figure below.

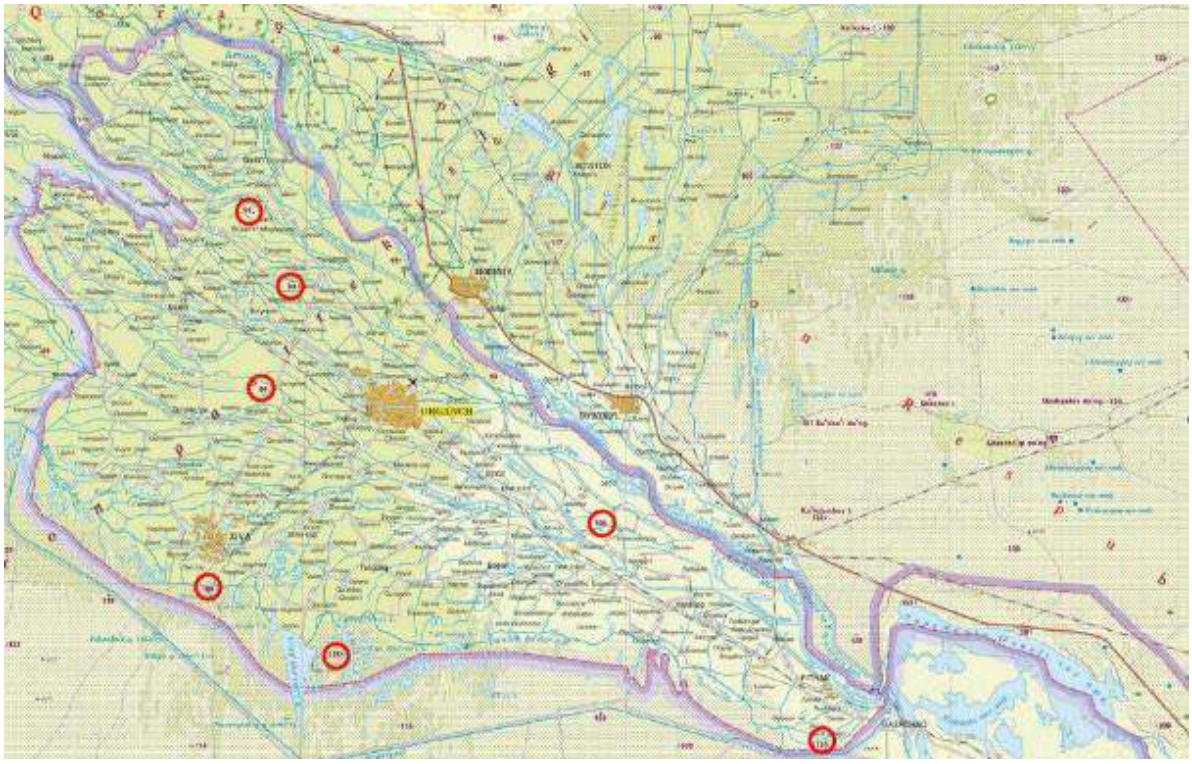


Figure 13 Map of Khorezm Province with elevations (Source: National Atlas)

24 https://weatherandclimate.com/uzbekistan/khorezm

343. The Project will be distributed across seven districts of the Khorezm Province where the topography is predominantly plain.

Geology and Soils

344. The geological conditions of the Project area were formed during the Golotsen and Upper Pliocene periods, comprising Cenozoic clays, sandstones and loamy-sandy loam of river sediments as shown in the figure below. Khorezm Province comprises the territory on both sides of the Amudarya River, whereas the river's left bank is an oasis formed by the Amudarya River sediment depositions.

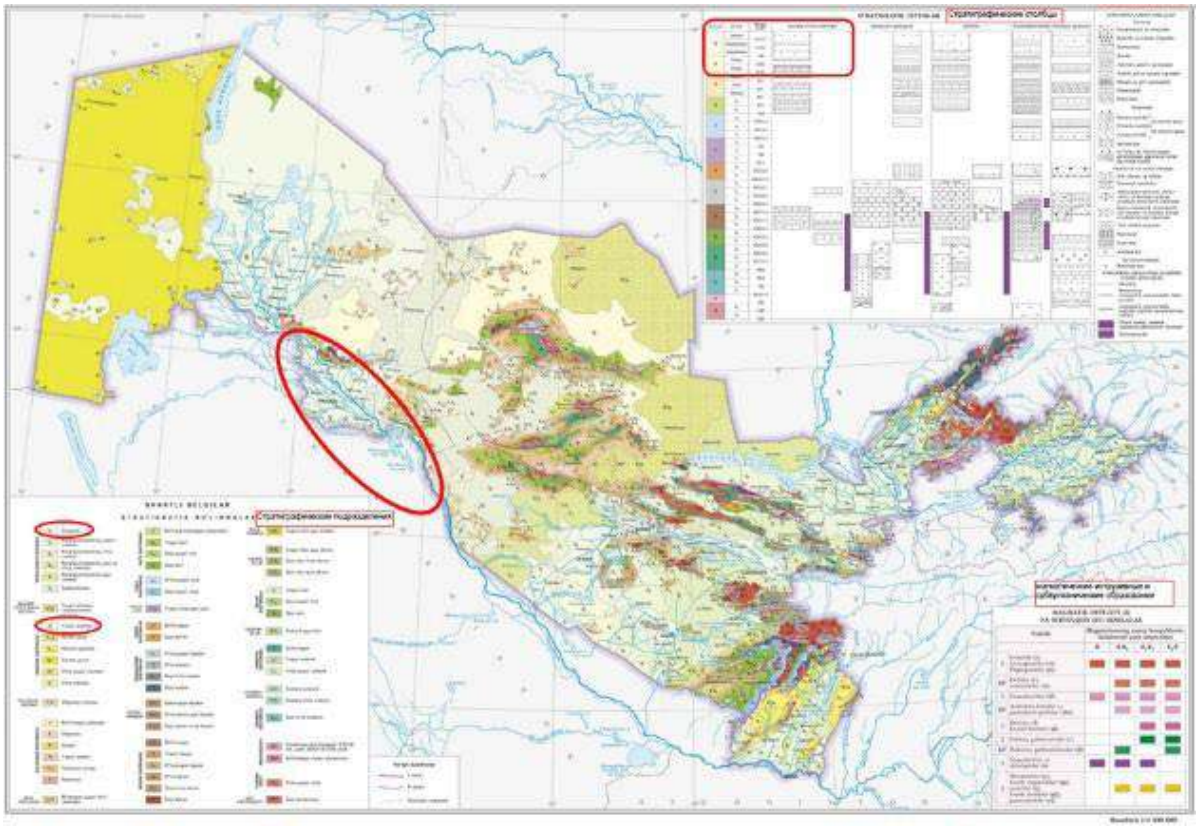


Figure 14 Geologic map of Uzbekistan
(Source: National Atlas)

345. The geology of the right bank of the river is similar to that of the Kyzylkum Desert. It is an immense desert area, which is mostly excluded from the province classification of agricultural and land resources, and it has a small area for agricultural irrigation.

346. The Project area lies on the left bank of the river. The terrain of the Project area represents the plain depressions between the small hills, often filled with salt marshes, grey meadow soils, saline soils, intra-oasis sands and takyrs (salt flats).

347. Most territories are irrigated farmlands; about 60% of soils can currently be classified as “irrigated alluvial meadow soils.” Developed on alluvial deposits, meadow soils are considered the best land resources, and most have already been cultivated. Soils developed on eluvium are less suitable for farming, with only a fraction of these soils currently being cultivated.

348. Soil texture is dominated by silt loams, loams, and sandy loams, constituting almost 80% of all soil layers. Organic matter in irrigated soils is low, including, on average, 0.75% in the topsoil layers and decreasing in the deeper layers. Over 32% of the lands

are highly saline, and the remaining soils are moderately salty and dispersed.

349. Due to the increased soil salinity and irrigation mismanagement, about 4.5 ha of the Khorezm Province was classified as marginal lands; land covered by forest and desert tends to have lower salinity levels.

Seismicity

350. The Project area is located very close to the active seismic South Tien Shan zone and has a seismic intensity of up to 6-7 and with a frequency of once in 1000 years. The recent earthquakes in the province were reported by the Republican Centre for Seismic Monitoring of the Ministry of Emergency Situations, as follows:

351. The earthquake 25with a magnitude of M = 6.6 occurred in Afghanistan on 21 March 2023 at 21:47. In the Khorezm Province, the strength of this earthquake ranged from M =4-5.

352. The earthquake 26with a magnitude of M = 6.0 occurred in Afghanistan on 5 January 2023 at 19:25. In the Khorezm Province, the strength of this earthquake ranged from M =3.

353. The project area has a history of some strong earthquakes including Kunya-Urgench Earthquake of 1208 with magnitude of 6.2. The seismic map of Uzbekistan and the data on the strongest earthquakes in the region are provided in Figure 15.

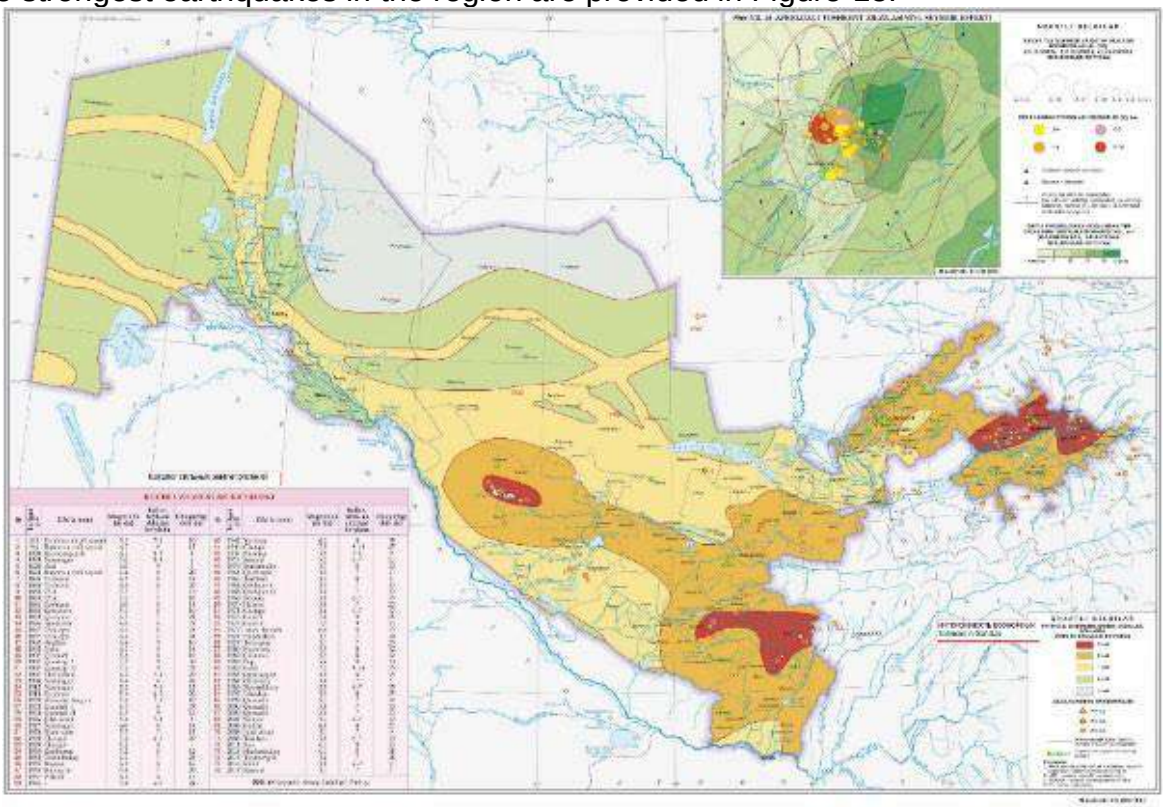


Figure 15 Seismic map of Uzbekistan (Source: National Atlas of Uzbekistan)

25 https://aktualno.uz/ru/a/8597-uzbekistan-oshhutil-otgoloski-zemletryaseniya-v-afganistane

26 https://www.gazeta.uz/ru/2023/01/05/earthquake/

3.1.1. Hydrology

Surface Water

354. The Project area lies within the Amudarya River Basin. The Amudarya is the largest river in Central Asia, with a drainage area of 309,000 km2 and a length of 2,540 km. This transboundary river is crossing Afghanistan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan and has three main tributaries: the Kafirnigan, Sherabad and Surkhandarya rivers. The total average annual flow of the Amudarya River is 73 km3, with a storage volume of 24 billion m3.

355. The river water is muddy and carries a large amount of suspended particles. The river has high turbidity of 20.0 to 39.0 mg/L and ranks first among the globe's rivers for the volume of silt in the water. The river, throughout the middle and lower currents, represents a series of channels separated by chalk and sandy islands as illustrated in Figure 16.

356. The Amudarya River flows along the north-eastern and southern borders of the Project area.

Figure 16 Amudarya River's delta in Khorezm Province (Source: Google Earth)

For the last decade, the Project area has faced a water deficit, particularly during the vegetation season when the need for water resources is much higher than at othertimes. The peak of the water deficit falls on April-May and through the summer. The Uzhydromet Agency 27reported that in 2021, the peak of the deficit was caused by low river water due to little snow, dry winter, low precipitation in the spring, and high air temperatures. In

27 https://kun.uz/ru/news/2022/08/16/nizovya-amudari-ispytyvayut-ostryy-defitsit-vody-eksperty- govoryat-o-mertvyx-obyemax

2022, the river flow was much higher. Still, due to water withdrawal downstream, including for filling reservoirs severely affected by the drought of 2021, the water deficit reached almost 70% of the water withdrawal limit in the lower reaches. The last fifteen years are considered low water in the river delta: the waters of the Amudarya River reach the Khorezm area much less, resulting in the situation when Tuyamuyun reservoirs cannot accumulate water resources. Since February 2021, the volume of water in reservoirs has never exceeded 4 km3, which is less than the amount of water in Tuyamuyun reservoirs in the summer of July 2019. For most of the last one and a half years, the volume of water has been less than or equal to the dead volume. The negative trend is primarily caused by climate change, irrational water use, and increased water withdrawal from river tributaries and watersheds.

357. Almost eighty percent of the Amudarya River is regulated by more than 35 water facilities, among which the two central watersheds are:

358.

359. Nurek Dam (Tajikistan) on the Vaksh River, a tributary of the Amudarya River

360. Tuyamuyun Hydro System on the Amudarya River (border of Uzbekistan and Turkmenistan)

361. It is a system of four interconnected reservoirs, and the main dam was constructed in 1969 and commissioned in 1979 with several upgrades in 1970÷198328. The system is shared between Uzbekistan and Turkmenistan: Tuyamuyun Reservoir provides water to Kaparas-Kala Reservoir and Sultansandjar Reservoir (Turkmenistan), which is connected by canal with Koshbulak Reservoir. The system also has a Hydropower Plant of 150 MW on the main dam.

362. The main pond of the system is Tuyamuyun Reservoir, an enlarged lake behind a dam with a capacity of 7,800 mln. m3. This dammed river reservoir provides the raw water feed to several irrigation canals and Pitnak WTP, which delivers drinking water. The reservoir is the first part of the water treatment process; water retention time allows particles and silts to settle out along with the primary biological treatment (using algae, bacteria, and zooplankton that naturally live in the water). However, the current state of Tuyamuyun Reservoir is silted for one-third while the water achieved its dead volume.

363. A series of canals on the lower Amudarya River diverting water to Uzbekistan. In the Project area, the water of the Amudarya River is also diverted into the province's local canals for cotton, wheat, and fodder farming cultivation. Several irrigation and drainage agricultural canals are present in the area, including Palvan, Ermish, Shavat, Davdon and Kylychniyazbay. According to 2010 data, the length of the irrigation drainage network in the Khorezm Province exceeded 9,000 km.

364. River floods in different periods and irrigation drainage waters contributed to the formation of lakes in Khorezm Province. Some lakes were the old riverbed of Amudarya River. The province amounts to some 500 lakes and water ponds. Not all lakes have names. The local population labels them by the nearest settlement and the government authorities (Khorezm Province Department of Agriculture, Water Resources, Land Resources, and Cadaster) label them unofficially by the name of the closest farmland. The study area comprises 196 unnamed lakes with an average area of 0.08 km2. The largest lakes of the province are illustrated in Figure 17.

28 https://wiki5.ru/wiki/Tuyamuyun_Hydro_Complex

Figure 17 Lakes in the Project area (Source: Google earth)

365. Most lakes have dark and salty water. The largest lake is Lake Ulug Shorkul, with a surface area of 27.4 km2. The smallest one is Lake Otolikkol, which has an area of 0.007 km2. Some big lakes represent a system of small water ponds. For example, Lake Dongizuldi, located in Khazarasp District with a total area of 0.7 km2, is divided into 15 ponds with an average area of 0.05 km2.

Groundwater

366. Within the Khorezm oasis, the groundwater table depends on the water level in the Amudarya River. The overall groundwater table in the Project area is highest during the Amudarya River flood period (in spring), while in autumn and winter, it drops sharply. On irrigated lands, the groundwater regime also changes, rising sharply during irrigation and decreasing during the non-irrigation period. Considering the relatively high groundwater table, the water utility uses the Tukmangit aquifer in the Shavat District as a drinking water source despite its relatively high mineralisation. In some areas of Khorezm Province, groundwater is the only source of drinking water and water for household needs. Most of the households and businesses in the province, in addition to the tap water, have wells in their yards.

3.2. Biological Environment

3.2.1. Nature Protected Areas

367. Khorezm Province has only one national protected area, Kyzylkum State Reserve which was established in 1971. It is divided between Khazarasp District, in Khorezm Province, and Romitan District in Bukhara Province but is mostly situated in Khorezm Province occupying 8,844 ha. The distance from the Kyzylkum State Reserve to project territory is more then 110 km.

368. A nature reserve of regional significance, Yangibazar Reserve was established in the Yangibazar District in accordance with Order of District Government 738 on 10 May 2003. The reserve comprises a lake and the tugai system inhabited by semi-aquatic birds and fish.

3.2.2. Terrestrial Biodiversity

369. More than 148 plant species, belonging to 46 families and 110 genera, are found in the Kyzylkum Nature Reserve, 2940 of them endemic to Central Asia. The plant varieties are represented by 11 species of ornamental plants, 28 medicinal, 25 melliferous, 39 forage, two types of tanning, four types of poisonous and four types of edible plants on the reserve's territory.

370. The fauna of the reserve is quite diverse due to the presence of the river, tugai forest, and the desert. There are 29 species of reptiles found in the Amudarya River delta. Snakes with habitation in the area include viper, sand ephas, and multi-coloured, spotted, and striated snakes, water snakes, and arrow snakes. The lizards include grey monitor lizard, long-eared, sandy, takyr and spotted round-headed lizards, steppe agama, grey monitor lizard, sandy, lined, striped and other foot-and-mouth lizards, geckos, and others. The Central Asian land turtle is also present in the reserve. Most of these reptiles are found on the right bank of the Amudarya River.

371. The bird fauna consists mainly of migratory birds since nesting and sedentary birds are represented by a relatively small number of species living within the boundaries of the tugai forest and in the sandy desert. In different seasons, 267 species were recorded in the reserve. Resident species include the white-winged woodpecker, Khiva pheasant, grey tit, the ubiquitous magpie, Turkestan ground jay, ringed and little doves, desert raven, golden eagle, and saker falcon. Breeding species are represented by many warblers, crickets, redstarts, and nightingales, settling under the canopy of the riparian forest.

372. The rare brown pigeon, common doves, hobbies, hawks, common kestrel, marsh harrier, little plover, and hawksbill nest in the reserve. The desert areas are inhabited by African houbara, black-bellied and white-bellied sandgrouse, thick-billed plover, desert warbler, and dunnocks. The migratory species are represented by pelicans, black storks, small cormorants, white-tailed and long-tailed eagles, and steppe eagles.

373. Mammals are represented by 35 species. Among them, a special place is occupied by the Bukhara deer, whose acclimatisation in the reserve was successful, and currently, this species is a prominent representative of tugai ecosystems. Among other species are the following:

374.

- Wild boar and jackal, which successfully restored their numbers after the creation of the reserve
- Caracal
- Three types of wild cats - the steppe cat, the sand cat, and the jungle cat
- Steppe wolves are often recorded in winter

29 http://explorers.uz/ru/sights/kizil_kumskiy_gosudarstvenniy_zapovednik.html

- Numerous gerbils including great, midday, tamarisk, and thin-toed ground squirrel
- Caragana fox, tolai hare, bandage, badger, and steppe polecat are commonin desert areas
- Long-eared hedgehog
- Gazelle and saiga antelopes are also in the reserve during their winter migrations.

3.2.3. Waterfowl and Fauna around Lakes

375. Fish farms and surrounding lakes in Khorezm Province are located on a waterfowl flyway, e.g., Ciconiiformes, Anseriformes, and Laridae, migrating between their breeding areas in Russia and Northern Kazakhstan and wintering places in Central and Southern Asia. 30Due to the area's natural water shortage, the role of artificial watersheds in the study area has significantly increased. Waterfowl moved from their lost habitats in the Aral Sea to the artificial water reservoirs (e.g., fish farms), small natural ponds, discharge lakes, and wetlands in Khorezm Province.

376. One hundred forty bird species have been recorded since 1994 in the Amudarya River Basin, where more than 30 species are waterfowl. Dense thickets of reed on the small lakes and ponds attract Phalocrocorax carbo, Nycticorax, herons, and other species for nesting. Charadrius dubious, C. alexandrinus, Vanellus leucurus, Himantopus, Glareoloa pratincola, Recurvirostra avosetta, Larus genei, Sterna hirundo, and others can be found on islets and the open banks of desert waterbodies and salines. Panurus biarmicus, Hippolais languida, Acrocephalus dumetorum, A. Agricola and Emberiza schoeniculus also breed.

377. Up to 20,000 birds (Fulica atra, Netta rufina, and Aythya ferina) were recorded in the 1990s on Lake Ulug-Shorkul. However, fishing and hunting are becoming increasingly popular in the area, forcing the waterfowl to leave Lake Ulug-Shorkul and other lakes.

378. The fish farm ponds attract concentrations of fish-eating species – cormorants, herons, gulls, and terns. Nationally and internationally protected species include Pandion haliaetus, Oxyura leucocephala, Marmaronetta angustirostris, Phoenicopterus roseus, Pelecanus onocrotalus and Haliaeetus albicilla. The sandy desert surrounding the waterbodies has become degraded because of overgrazing. Typical species in these areas are Corvus corone, Corvus monedula, Coracias garrulus, Pterocles orientalis, Caprimulgus aegyptius, Galerida cristata, Merops persicus, M. apiaster, Oenanthe deserti, Sylvia nana, Hippolais rama, and Rhodospiza obsoleta.

379. Mammals are represented by 17 species, where Gazelle subgutturosa is included in the National Red Book (2003), and Lynx caracal and Gazelle subgutturosa are on the IUCN Red List. Ondatra zibethicus, Sus scrofa, and Lepus tolai are the game animals.

380. Amphibians are presented by two species. Reptilians are represented by 17 species, where one of them is included in the National Red Book (Varanus griseous), and two are on the IUCN Red List (Varanus griseous, Testudo horsfieldi).

381. There are 36 species and subspecies of fish from nine families live in small lakes

30 Birdlife International (2023) Important Bird Area factsheet: Khorezm Fish Farm and adjacent lakes. Downloaded from http://datazone.birdlife.org/site/factsheet/khorezm-fish-farm-and- adjacent-lakes-iba-uzbekistan on 07/12/2023

and ponds across the region.

3.2.4. Protected Species

382. Natural habitats and the nature protected areas in Khorezm Province host a wide variety of wildlife species that fall into various categories of national and international protection status and are included on the IUCN Red List and/or the National Red Book. Those species include:

- Mammals:
  - Goitered Gazelle (*Gazella subgutturosa)* (included in the National Red Book (2009) and the IUCN Red List (listed as Vulnerable)).
- Birds:
  - Saker falcon (Falco cherrug) (IUCN Endangered category)
  - African houbara (Chlamydotis undulata) (IUCN Endangered category)
  - Steppe eagle (Aquila nipalensis) (IUCN Endangered category)
  - White-headed duck (Oxyura leucocephala) (IUCN Endangered category)
  - Marble teal (*Marmaronetta angustirostris*) (IUCN Near Threatened category)
- Reptiles:
  - Russian tortoise (*Testudo horsfieldii*) (IUCN Vulnerable category)
  - Desert monitor (*Varanus griseus*) (included in the National Red Book)
- Fish:
  - Amudarya shovelnose sturgeon (Pseudoscaphirhynchus kaufmanni) listedby the IUCN Red List as Critically Endangered.
  - Small Amudarya shovelnose sturgeon (Pseudoscaphirhynchus hermanni)(IUCN Critically Endangered category).
  - Aral barbel (*Luciobarbus brachycephalus*) (IUCN Vulnerable category).
- Plants:
  - Korolkov's Tulip (*Tulipa korolkowii*) is included in the National Red Book(2009) and the IUCN Red List (listed as Near Threatened).

Karakalpakstan Republic

Social Environment

Administrative Structure

383. This section describes the administrative structure in Uzbekistan.

384. Uzbekistan is divided into 12 provinces (viloyats), one autonomous republic Karakalpakstan and one independent city, Tashkent City, which is the capital. The provinces in turn are divided into districts, and province level cities (subordinate to province Khokimiyat), and districts that comprise ofurban and rural mahallas (or avuls) – local self-governing organizations. Below outlines the administrative structure in Uzbekistan.

385. In total there are 170 districts and 30 province subordinate cities located in 14 regions of Uzbekistan, with 8,973 mahallas and avuls throughout the Republic. The following section describes the mandates and roles of the main administrative bodies.

Regional Administration

386. Each Province is headed by a Governor (Khokim) who represents the Government at the provincelevel. The Khokim is appointed (or dismissed) by the President of Uzbekistan and confirmed by the Counsel of Peoples' Deputies of the respective province. The executive body at the regional level is the province Khokimiyats comprising the Khokimiyat apparatus and ministry line departments.

District Administration

387. The district Khokimiyat is headed by a Khokim who reports to the Province Khokimiyat. The Khokimiyat has a leading role in the public administration of the country. Approval, support and participation of the district Khokimiyat is important for every development activity in the respective rayon. The district Khokimiyat is appointed and dismissed by the Province Khokim and confirmed formally by the appropriate Council of Peoples' Deputies. The apparatus structure of each district consists of district Khokim, 3 deputy Khokims (economic issues, spirituality and enlightenment and women's issues); the main specialists, organizational and control group and chancellery.

City Administration

388. The role of the city Khokimiyat is the public administration body in the country with a role similarto that of the district Khokimiyat, to which the city Khokimiyat is subordinated. The head of the city Khokimiyat is the Khokim who is the highest official on the territory. City Khokimiyats usually includeseveral urban mahallas.

Mahalla Committee

389. The mahalla committee is the lowest level of local self-government and the one linked directly tohouseholds. The committee is made up of four members: the chairperson who is elected by the mahallahouseholds for 2.5 years, the secretary who is selected by the chairperson, the 'posbon' who is responsible for security and is appointed by the district Department of the Interior, and the women's advisor who is nominated by the District Women's Committee. The mahalla committee is directly accountable to the district Khokimiyat. In urban-type settlements, the mahalla committee is supported by volunteers who have been selected by the local people jointly with the mahalla committee. In each mahalla committee, several sub-committees may be established to support the work of the mahalla committee, such as for youth, crime prevention, municipal / land improvement etc. In practice, committees are established based on the actual needs and priorities of the respective mahalla and usuallydeal with the resolution of family conflict, pension distribution, resolving women's issues, organizing weddings, funerals and other social events.

Street Elders

390. The street elder / head is a respected person who lives on one of the streets in the neighbourhood.She/he organizes the traditional events. These people know all the families on the territory and are ableto provide valuable support for example in identifying households who could be in difficulty for the payment of utility bills. They can also play a useful role in organizing meetings and disseminating information.

Senior Women Counsellors / Female Assistants to Women's Advisor

391. Senior women counsellors are selected by the households of the territory together with the mahallacommittee from those local women who are the most respected, active and

educated. They act as a linkbetween the women of the neighbourhood and the mahalla committee / women's advisor. They focus on solving issues concerning women, children and vulnerable people, organizing traditional events, supervision of children and participating in the distribution of social support. They are also involved in informing women about official notices and information.

2. General information on the RoK

392. The RoK is located in the southwest part of Uzbekistan and occupies northwest part of Kyzylkumdesert and Amudarya delta. The total area of Karakalpakstan is 165 600 sq.m. and total population is about 1 923 700 people (as of January1, 2024.

Table 22 Administrative divisions of the Karakalpakstan

#	**District/City**	**Population (people)**	**Male population**	**Female population**	**Administrative center**
1	Nukus city	339 200	167 800	171 400	
2	Amudarya district	212 100	107 600	104 500	Mangit city
3	Beruni district	205 100	103 200	101 900	Beruniy city
4	Bozatau district	21 900	11 100	10 800	Bozatau semi-urban center
5	Kanlykul district	54 400	27 800	26 600	Kanlykul semi-urban center
6	Karauzyak district	54 400	27 800	26 600	Karauzyak semi-urban center
7	Kegeyli district	74 800	38 3000	36 500	Kegeyli semi-urban center
8	Kungrad district	136 000	69 800	66 200	Kungrad city
9	Muynak district	33 600	17 000	16 600	Muynak city
10	Nukus district	53 900	27 300	26 600	Akmangit semi-urban center
11	Takhiatash district	76 800	38 100	38 700	Takhiatash city
12	Takhtakopir district	38 900	19 800	19 100	Takhtakupyr semi-urban center
13	Turtkul district	228 800	113 500	115 300	Turtkul city
14	Khodzheyli district	128 700	64 400	64 300	Khodzheyli city
15	Chimbay district	115 700	58 700	57 000	Chimbay city
16	Shumanay district	58 000	29 100	28 900	the Shumanay city
17	Ellikkala district	171 000	85 200	85 800	Bustan city

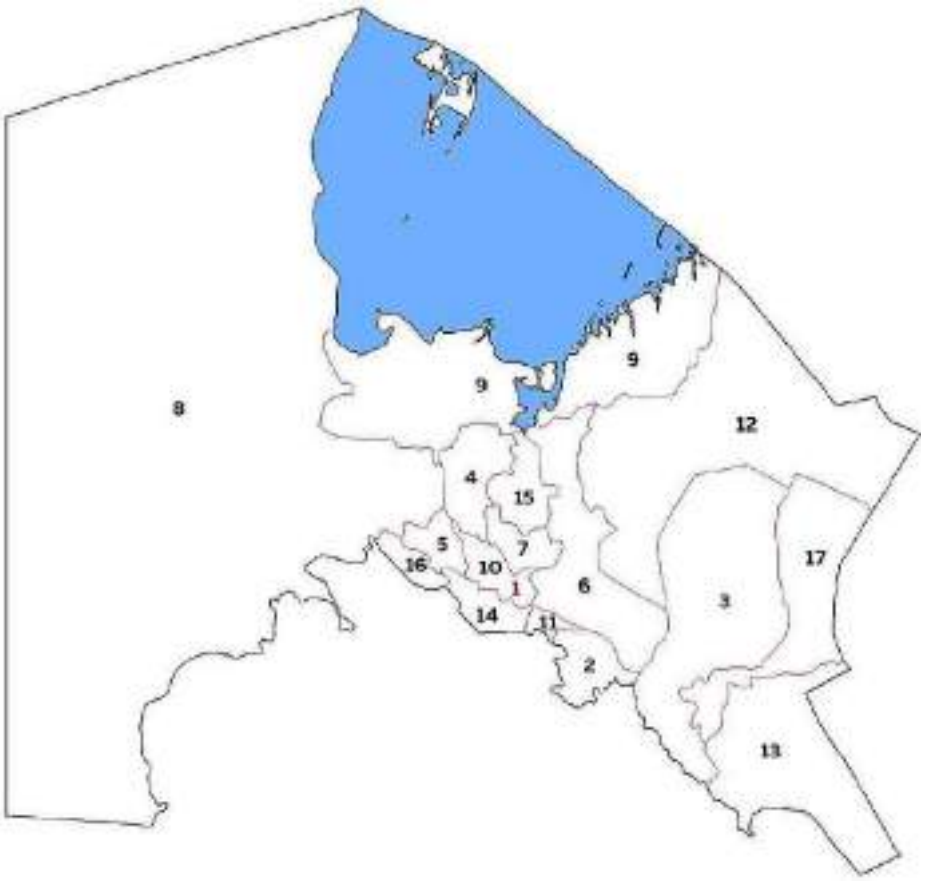


Figure 18 Administrative map of Karakalpakstan

Project districts

Amudarya District

393. The Amudarya district is a district of Karakalpakstan in Uzbekistan. The capital lies at Mangit. Itsarea is 1,020 km2 (390 sq m), and it had 212,100 inhabitants in 2024. There are one city Mangit,four towns Jumurtov, Kipshak, Kilishbay and Xitay and 16 village councils Nazarxan, Orta-kala, Kipshak, Kuyuk-kopir, Xitay, Aq altin, Shaykul, Kilishbay, Kanli, Amir Temur, Durman, Bobur nomli, Buzyop, Tolqin, Tashyop and Xolimbeg.

Beruni District

394. Beruni is a city in the autonomous RoK, Uzbekistan. It is located on the northern bank of the Amudarya near Uzbekistan's border with Turkmenistan with population 205 100 in 2024.. Beruniy received city status in 1962. Beruniy is an important industrial city in Karakalpakstan. It is home to an asphalt plant, a brick factory, a cotton plant, and a shoe factory. There are also many textile factories. Beruniy received the status of a city in 1962. By road it is 936 kilometres (582 mi) west of Tashkent and 55.6 kilometres (34.5 mi) northeast of Khiva. Beruniy has a cold desert climate with sharp continental influences. It has cold winters and hot summers.

Kanlikul District

395. Kanlikul district is a district in the RoK. The seat lies at the urban-type settlement Kanlikul. Its area is 740 km2 (290 sq mi) and it had 53,800 inhabitants in 2024. The district consists of onetown Qanlıkul and seven rural councils Arzimbet qum, Beskópir, Jańa qala, Bostan, Kosjap, Nawriz, Qanlıkul.

Kegeyli District

396. Kegeyli district is a district of Karakalpakstan in Uzbekistan. The capital lies at the town Kegeyli. Its area is 920 km2 (360 sq mi) and it had 74,800 inhabitants in 2024. The origin of Kegeyli is associated with the Kegeyli canal, which flows through the town itself and through the district of Kegeyli also. Both sides of this canal are called Kegeyli because they were surrounded by kegay trees and turquoise. This was later generalized to the town. Kegeyli district was created in 2004 by the merger of former Bozataw district and former Kegeyli district. As of 2021, the district contains one city Xalıqabat, one town Kegeyli and eight rural communities Abat, Aktuba, Jańabazar, Jalpaq jap, Kók Ozek, Kumshunkól, Júzim baǵ, Iyshan kala.

Kungrad District

397. Kungrad district is an administrative unit in the RoK, the administrative center is the city of Kungrad with population in 2024 -136 000. The westernmost municipality of Uzbekistan. Kungrad district was established in 1927. Kungrad district is bounded on the west by the Ustyurt plateau, on the east by the Amudarya River, onthe north by the old coastline of the disappearing Aral Sea, and on the south by the border of the Republic and the Khorezm region. Its territory accounts for almost half of the area of Karakalpakstan and 12% of the area of Uzbekistan. It has 6 urban settlements: Aksholak, Altynkul, Bekabad, Zhaslyk, Karakalpakia, Kubla-Ustyurt. 10 rural residents: Adabiyat, imeni Azhiniyaza, Kungrad, Kipshak, Nauryz, Ornek, Raushan, Suuenli, Ustyurt, Khorezm. The Ustyurt Gas Chemical Complex and the Kungrad Soda Plant are located in the Kungrad district. The Kungrad district, like the whole of Karakalpakstan, is an environmental disaster zone due to the drying up of the Aral Sea.

Muynak District

398. Muynak district is an administrative unit in the RoK with population in 2024 - 53 800. The administrative center is the city of Muynak, it was established on September 19, 1931. The district borders Kazakhstan from the north andpartly from the northeast through the Aral Sea, from the west and southwest - with Kungrad, from the east - with Takhtakupyrsky, from the south — with Kegeli, Chimbai and Karauzyak districts of Karakalpakstan. The official area of the district is 37,900 km^2, but in recent decades, due to the decreasein the level of the Aral Sea, the area of the district has increased dramatically. Muynak district occupiesthe second place in terms of occupied area (Kungrad district with an area of 74,400 km^2 is in the first place) among the districts of Karakalpakstan.

Nukus District

399. Nukus district is an administrative unit in Karakalpakstan, Uzbekistan. The administrative center is the urban—type settlement of Akmangit. The district was established on December 25, 1968. According to official data, the population of the district in 2024 was 53,900 people. According to the national composition, Karakalpaks made up 60.8%, Kazakhs — 30%, Uzbeks — 8.7%, other nationalities — 0.5%. and there are 6 rural gatherings of citizens: Arbashi, Bakanshakly, Kerber, Krantau, Samanbai, Takyrkol. There are 3 colleges, 33 secondary schools, 1 children's school of musicand art, 11 kindergartens and 2 information resource centers in the district.

Takhtakopir District

400. Takhtakopir district occupies the northern part of Uzbekistan and is an

integral part of Karakalpakstan with population 38 900 in 2024. The urban settlement of Takhtakopir, which serves as an administrative center, and 8 rural gatherings are concentrated on its territory. local area has great potential for the development of the resort area and tourist infrastructure. The area has long been famous for underground thermal springsthat come to the surface in different places of the area.

Shumanay District

401. Shumanai district is an administrative unit in the RoK (Uzbekistan) with population 58 000 in 2024. The area is 78.3 km. The administrative center is the city of Shumanai. Shumanai district was established on October 7, 1950. On February 5, 1960, the district was abolished, and its territory was transferred to the Kungrad and Khojaly districts. In 1967, the area was restored. The population is 54,800 people. Nationalities: Karakalpaks, Kazakhs, Uzbeks. 7 rural gatherings of citizens: Akzhar, Begzhap, Birleshik, Diykhanabad, Kettler, Samy, Sarmanbaykol.

Karauzyak District

402. Karauzyak district is an administrative unit within Karakalpakstan. Date of formation, 1975. Square. 5890 km2.The number of urban–type settlements: – 1. The number of gatherings of citizens: - 12. Population (2024): – 54,400 . Border areas: – Nukus, Amudarya, Beruniysky, Kegeylysky, Chimbaysky, Takhtakupyrsky, Muynaksky districts.

Ethnicity and Language

403. Most of the population of the RoK are Uzbeks (38.8%), Karakalpaks (35.8%) and Kazakhs (11.8%), the rest are Turkmens (5%), Russians (1.7%), others (1.3%) (For 2022). The main language spoken in the district is Uzbek and Karakalpak, however some people speak Russian. The RoK and particularly in the project area there are no ethnic or cultural groups which are identified or classified as “indigenous people” according to the IFC’s guidance note.

Religion

404. The majority of Uzbeks are Muslims, mainly of the Sunni branch; there are also small groups practicing orthodox Christianity and Judaism.

Socio-economic profile

405. The RoK has large natural, mineral and agricultural resources,labor potential, road, transport andengineering and communication networks, industrial infrastructure, convenient geographical location and large territory. The main sectors of agriculture in the RoK are grain farming (production of wheat and raw rice), cotton growing, cattle breeding and silkworm breeding, industry and construction.

406. By the end of 2022, the GRP of the RoK increased by 4.0% and amounted to 29,925.4 billion soums. GRP growth is due to positive growth rates in the main sectors of the region's economy, such asagriculture, forestry and fisheries – 103.3% (share in the GRP structure – 29.6%), industry – 100.6% (23.6%), construction – 107.7% (8.3%) and services – 106.0% (38.5%). GRP per capita increased by 2.6% and amounted to 15,249.4 thousand soums.

407. In terms of social protection of the population and the creation of decent living conditions, it is ofgreat importance to solve such problems as providing the population with decent housing. In particular,over the past five years, 4,390 thousand sq.m. have been put into operation in the region. housing, 15.2thousand places were created in preschool

institutions, 38.3 thousand places in schools. During the same period, about 127 thousand jobs were created.

Land use and Ownership

408. The project sites are a combination of populated areas and agricultural lands represented by typical urban and agro- biocoenosis. The road reconstruction will be limited to existing roads only and the existing width of the roads will be maintained.

409. In general, almost all reconstructed road sections pass through populated areas. On both sides there are residential buildings, social facilities, business facilities mixed with agricultural fields and gardens, there are also greenhouses. Also, the road sections are crossed by multiple canals and bridges. A large number of trees grow along the roads.

Vulnerable/Disadvantaged Group/Persons

410. The project area includes 11 districts and more than 40 makhals. The main vulnerable/disadvantaged groups include the unemployed in the project area, Women who head families, large families (more than 5 people), low-income families, the disabled, elderly people who have no one to take care of, etc.

Cultural Heritage

411. The Aral Sea region under consideration has for millennia been at the crossroads of great cultures connected by the Great Silk Road. From the north, through the Ustyurt plateau ran the Great Silk Road, which played a major role in the development of cultural and economic ties between the peoples of Europe, Caucasus, West Asia, Central Asia and China. Thus, several historical and architectural monuments related to the history of the Great Silk Road are located in the area from the study site.

412. By the beginning of the 1st century AD. Ancient Khorezm came under the influence of the culture of the Kushan Empire, which was most vividly reflected in the construction of earthen fortresses "Caravan-Sarai" (made of earthen bricks "PAKHSA is a mixture of clay and straw"). During that period, new construction models emerged that included smaller fortresses inside the settled areas, as Caravan-Sarajs, and as fortifications and defences in case of attack by enemy troops, storage of provisions (foodstuffs) and security for civilians.

413. All monuments in the project area are attributed to the period of Ancient Khorezm, the culture of which is also the birthplace of Zoroastrianism. This is evidenced by the numerous archaeological and historical reminders that have survived. With the advent of Islam in the 8th century AD, not only the way of life, religion, but also architecture changed. In the Islamic period, burnt bricks appear, which also indicates that the historical buildings are of older origin.

414. Karakalpakstan has a unique and rich cultural heritage. It is represented by ancient monuments of archeology and architecture, a kind of oral folk art, performing arts, rituals and customs, traditional crafts.

415. Thus, on the territory of Karakalpakstan there are many archaeological and architectural monuments, which are mainly represented by structures of defensive importance, including a number of impressive fortresses along the borders of inhabited

lands. Most of the earliest of them date back to the IV century BC — the time of the withdrawal of Ancient Khorezm from the Achaemenid Empire.

416. According to the preliminary data, and site visit observation in provinces there are cultural sites within the project districts located in project districts, presented in the **Figure 19**.

417. However, according to the bibliography, the research it number of sites in Turkul district is more than twenty six sites; Chimboy is more thatn sixteen sites, most of them cemeteries; in Shumanay around eight sites; in Mangit city four cultural heritage sites and most of them monuments; in Okmangitfour monuments and one kala (fortress); in Takhtakupir more than fifteen sites; in Korauzyak six sites;in Keygeli ten sites; in Kungrad more than seventeen sites; in Takhiatash more than five sites; in Ellikkala more than thirty five sites like presented in Figure 19; and in Nukus city approximately nine sites.

Figure 19 Dumankala

418. Based on the findings and observations, the main recommendation is during the detailed feasibilitystudies work, the consultant should cooperate and close work with the representative of the Agency ofCultural Heritage of the RUz, Department of Cultural Heritage of the RoK.

Table 23 **List of cultural heritage sites in RoK**

#	Name	Description
1	Chiplik	Chilpik (I–IV, IX–XI centuries) is located on top of a butte at the right bankof Amudarya, 43 kilometres south of the city of Nukus.
2	Sultan Uvays DagGyaur-Kala	Sultan Uvays Dag Gyaur-kala (IV century B.C. – III century A.D.) is situatedon the left bank of the Amudarya River between the Chilpik and Jampik-kalamonuments. The Fortress was constructed in an early ancient period and today only the southern and part of the western walls remain.
3	Jampik-Kala	This ancient settlement is located on the southwest branches of the Sultan Uvays Dag mountain range. This is one of the most picturesque and magnificent monuments on the right bank of the Amudarya River.
4	Kizil-Kala	Kizil-kala, translated as a “Red Fortress” lies 1.3 kilometres west of Toprak-kala. It has almost a square shape with towers on both sides. Initially the Kizil-kala Fortress was built in the late antiquity period (I-IV centuries A.D.)

5	Toprak-Kala	Toprak-kala (I–VI centuries A.D.) is located several kilometres south of theSultan Uvays Dag moun-tain range.
6	Akshakhan-Kala	Akshakhan-kala (III century B.C. – VI century A.D.) situated on the ancient bed of the Amudarya River is one of the largest and most sophisticated monu-ments of the Ancient Khorezm period.
7	Ayaz-Kala	Ayaz-kala (IV-III centuries B.C.) is one of the most beautiful and picturesquemonuments in Karakalpakstan. Actually, Ayaz-kala is not a single fortress buta group of three that surround a dominant hill up to 100 meters high and located on the east side of the Sultan Uvays Dag mountain range.
8	The Big Kirik-Kiz-Kala	The Big Kirk-Kiz-kala (IV-III centuries B.C. to III-IV centuries A.D.) is a sublime fortress located on the border of irrigated lands. It is part of a frontierchain situated east of the Ayaz-kala monument.
9	The Small Kirik-Kiz-kala	Fortified constructions of the Small Kirk-Kiz-kala monument (IV-III centuries B.C.) consist of differently shaped western and eastern parts that adjoin each other. The Small Kirk-Kiz-kala frontier located not far from the Big Kirk-Kiz-kala monument was part of the defensive system constructed onthe outskirts of the oasis.
10	Kurhashin-Kala	The Kurgashin-kala Fortress (IV-III centuries B.C.) is situated 17 kilometresnorth of the Djanabas-kala monument. It has a rectangular shape.
11	Bazar Kala	Bazar-kala (VI–V centuries B.C. – I century A.D.) was constructed during the archaic period and existed until the beginning of the Kushan period. In ancient times the Bazar-kala Fortress was the centre of the agricultural areas irrigated by the Bazarkalin canal waters.
12	Djanbas Kala	The Djanbas-kala frontier dates back to the IV century B.C.-I century A.D. Today it is known as spectacular and magnificent ruins located on a hillside overlooking the old branch of the Amudarya River.
13	Koy-Krilgan Kala	Koy-Krilgan-kala is one of the few largest, fully excavated ancient sites of Karakalpakstan. The Fortress from the other monuments by its originalplanning.
14	Angka-Kala	The Angka-kala settlement (I–III centuries, X–XII centuries A.D.) is situated22 kilometres north of Turtkul city.
15	Eres Kala	Eres-kala is located 12 kilometres southwest of Turtkul city. Once these cityruins were a magnificent complex consisting of a settlement and palaces.
16	The Big Guldursun	The Big Guldursun (IV–III centuries B.C. – III cen-tury A.D., XII–XIII centuries A.D.) is one of the most splendid monuments of the Khorezm ShahsDynasty. It is one of the largest Ancient Khorezm fortresses.
17	Pil Kala	The Pil-kala Settlement (IV-II centuries B.C., VII-VIII centuries A.D.) is situated in the northern part of the city of Beruni. Its shooting semi-oval towers are constructed thickly along its walls.
18	Duman Kala	The Duman-kala Fortress (I–III centuries A.D.) is located several kilometresfrom the city of Beruni. Remnants of the main irrigation canal that was constructed during the archaic peri-od were found within the vicinity of the for-tress.
19	Mizdahkan	Mizdahkan Settlement is situated on the hills along the western outskirts of the city of Khodjeyli, stretching on both sides of the road leading to Kunya- Urgench. The ancient city of Mizdahkan was founded on the western hill in the IV–III centuries B.C.
20	Mazlumkhanm S uluMausolen	The Mazlumkhan-sulu mausoleum (XII-XIV centu-ries) is a semi-underground architectural monument.

21	Beleuli	The medieval Beleuli Complex (XIV century A.D.) is located on the Ustyurt Plateau. It consists of several buildings, including a caravansarai, a burial ground, quarries and sardobas.
22	Kurgancha	The Kurgancha Complex (XII to the beginning of the XIII centuries A.D.) consists of a settle-ment, a tower, a pottery kiln and separate con-structions. It is located under the chink of the Ustyurt Plateau, 105 kilometres northwestof the city of Muynak.
23	Narindjan-Baba	The Narindjan-baba Complex (XIII-XIV centuries A.D.) is one the most sacred and worshipped places in Karakalpakstan. It is represented by amulticompartment group of buildings.
24	Sultan Uvays-Baba	The Sultan Uvays-baba complex (XVII-XIX centuries A.D.) is one of the most revered sites in the lower reaches of the Amudarya River. Its name is associated with the name of Uvays al-Karani.

Khorezm region

Social Environment

419. Khorezm Region is located in western Uzbekistan and borders the Republic of Karakalpakstan in the north and west, with Turkmenistan in the south and with Uzbekistan's Bukhara Province in the east. The province area is 6,300 km². With the total population being 1,995,600 people as of Q1 2024, the population density of the province is 329 people per square kilometer.

Table 24 **Administrative divisions of the Karakalpakstan**

#	District/City	Population (people)	Male population	Female population	Administrative center
1	Urgench city	153 100	76 700	76 400	
2	Khiva city	98 800	49 000	49 800	
3	Bagat district	176 100	87 400	88 700	Bagat city
4	Gurlen district	157 200	79 700	77 500	Gurlen city
5	Koshkupyr district	182 300	91 900	90 400	Koshkupyr, semi-urban center
6	Urgench district	213 500	106 000	107 500	Karaul semi-urban center
7	Khazarasp district	206 000	103 000	103 000	Khazarasp semi-urban center
8	Khankin district	198 400	100 300	98 100	Hanka semi-urban center
9	Khiva district	154 800	77 100	77 700	Khiva city
10	Shavat district	180 400	90 100	90 300	Shavat city
11	Yangiaryk district	123 200	62 100	61 100	Yangiaryk semi-urban center
12	Yangibazar district	92 500	46 300	46 200	Yangibazar semi-urban center
13	Tuprakkalin district	59 300	29 300	30 000	Pitnak city

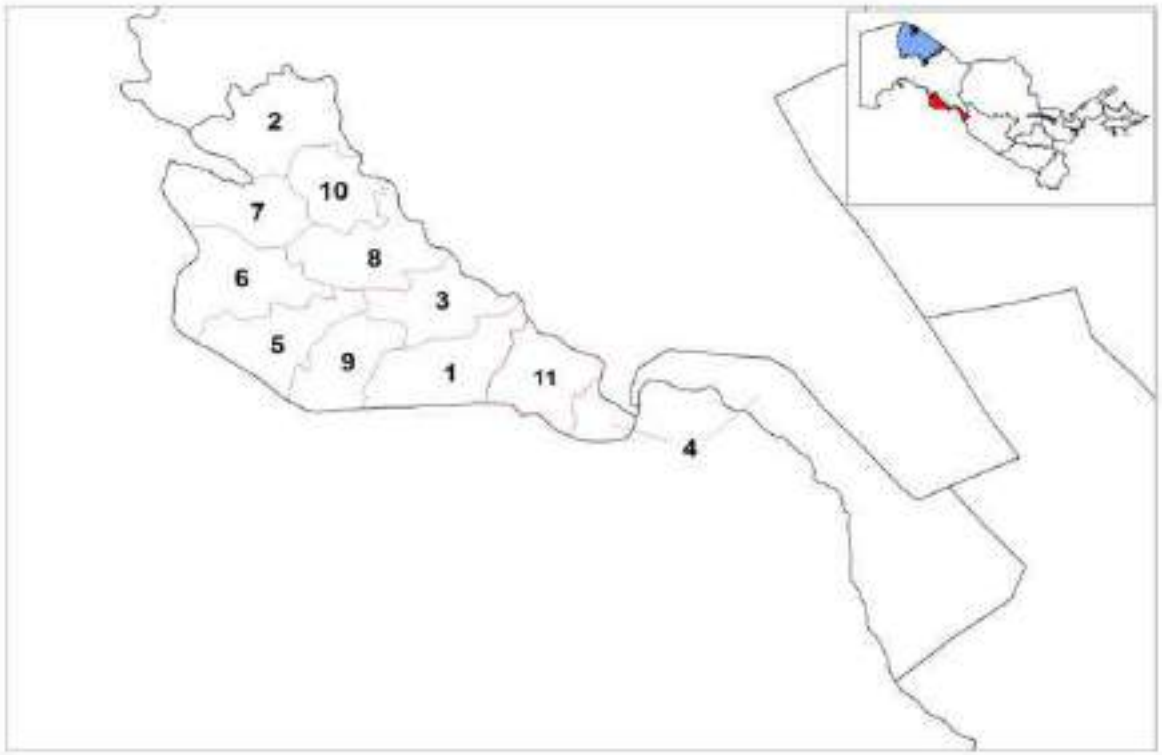


Figure 20 Administrative map of Khorezm region

Project districts

Bagat district

420. Bagat district is located 30 km southeast of Urgench and 24 km west of Khazarasp. Bagat district is considered one of the industrial areas in the Khorezm region. In addition to the main agricultural activities, the textile, clothing and construction industries are developed in the district. Reconstructions are underway to modernize the ceramic and cannery plants. More than 1,000 business entities engaged in animal husbandry, poultry farming and the fishing industry have been registered. Agriculture occupies a special place in the economic life of the district. Agricultural crops such as cotton, wheat, rice and corn are mainly grown here. The district consists of 5 urban settlements and 10 rural settlements.

Gurlen district

421. 3The Gurlensky district was formed in the 1920s. Gurlen district is located in the north of Khorezm region, its area is 447.4 square kilometers. Gurlen district occupies 7.3% of the territory of the region. The Amu Darya flows through the eastern part of the district. It borders Yangibazar in the south, Shavat in the west, Then beyond the bazaar in Turkmenistan, Amu Darya in Karakalpakstan. The district center is located 36 km from the city of Urgench, 15 km from the Shavat railway station. The district consists of 9 urban settlements and 9 rural settlements.

Koshkupyr district

422. Kushkupyr district was established in the 1930s. In 1938, it became part of the Khorezm region. The district consists of 6 urban settlements and 11 rural settlements. It borders Urgench district in the north, Khiva district in the south.

Urgench district

423. Urgench district was established in the 1930s. Urgench district is located at a distance of up to 12 km from the city of Urgench and is located around it. The population as of 2024 is 213.5 thousand people. Urgench district is considered one of the industrial and industrial areas in the Khorezm region. In the district, the main activity is agricultural. Agriculture occupies a special place in the economic life of the district. Agricultural crops such as cotton, wheat, rice, and corn are mainly grown here. The district consists of 1 urban settlements and 10 rural settlements

Khazarasp district

424. A district in the Khorezm region of the Republic of Uzbekistan. It was founded on September 29, 1926. It borders Turkmenistan in the south, the Turk Klin district in the east, the Republic of Karakalpakstan in the north, and the Bogota district in the west. The area is 0.45 thousand km2. There is 1 city in the district (Hazarasp), 8 villages (Bezhta, Boston, Karvak, Ovshar, Pichakchi, Sanoat, Ukurin mukhamon, Yangibazar). The center is the city of Hazorasp.

Khiva district

425. Khiva district was established in the 1920s. In 1938, it became part of the Khorezm region. The administrative center is the city of Khiva. The district consists of 8 urban settlements and 9 rural settlements. It borders with Urgench city in the south, Koshkupyr district in the north. The population as of 2024 is 154.8 thousand people.

Shavat district

426. Geographically, the district borders on Kushkupir in the south, Urgench in the southeast, Gurlensky district in the northeast, Turkmenistan in the north, northwest and west. The area is 460 km2. The district center, the urban-type settlement of Shavat, is located on the left bank of the Shavat Canal, 40 km from the regional center (the city of Urgench). The area has developed agriculture, fishing and craft centers. In the near future, a railway from Shavatsky district to Karauzyaksky with a total length of 79 km will be built. The population as of 2024 is 180.4 thousand people. The district consists of 7 urban settlements and 11 rural settlements.

Yangiaryk district

427. Yangiaryk district was established in the 1930s. In 1938, it became part of the Khorezm region. The administrative center is the urban settlement of Yangiaryk. Yangiaryk district borders with Khleven district in the west, Khankai district in the north, Bograd district in the east and the Republic of Turkmenistan in the south. The distance from the district center to the regional center is 25 km. The area is located at an altitude of 120-150 meters above sea level. Due to the fact that the area of the district is surrounded by sand, the temperature rises to 43- 45C in summer. The population as of 2024 is 123.2 thousand people. The district consists of 6 urban settlements and 8 rural settlements.

Yangibazar district

428. Yangibazar district was established in 1950. The administrative center is the urban settlement of Yangibazar. Yangibazar district is located in the north-west of Khorezm region, the territory is 34.3 km square. According to its natural geographical location, the district borders on the east and southeast with the Urgench district, in the north along the Amu Darya with the Republic of Karakalpakstan. Yangibazar district is located 16 km from the regional center of Urgench..The population of the district is 92.5 thousand people and consists of Uzbeks, Turkmens, Kazakhs, Karakalpaks, Tatars, Koreans, Ukrainians and other nationalities. The district consists of 3 urban settlements and 8 rural settlements.

Ethnicity and Language

429. Most of the population of the Khorezm region are Uzbeks (97.0%), remaining 3% are Turkmen, Kazakhs, Karakalpaks, Persians, and Russians. (For 2022). The main language spoken in the district is Uzbek, however some people speak Russian as well. Khorezm region and particularly in the project area there are no ethnic or cultural groups which are identified or classified as “indigenous people” according to the IFC’s guidance note.

Religion

430. The majority of Uzbeks are Muslims, mainly of the Sunni branch; there are also small groups practicing orthodox Christianity and Judaism.

Socio-economic profile

431. The economy of the Khorezm region is mainly based on cotton. Cotton is certainly the main crop, although rice production has increased significantly over the past few years. There are also many orchards and vineyards, melon plantations and potato fields. The industry is also heavily focused on cotton, with the predominance of cotton refining, cottonseed oil extraction and textiles.

432. The gross domestic product of the region (GRP) in 2017-2022 increased by 17% to 21.6 trillion soums, industrial production increased from 2.8 trillion soums to 9.6 trillion. Sumy (46% growth). The textile, automotive, electrical and food industries, tourism, services, and greenhouses are identified as the main "growth points" of the Khorezm region. Agricultural production increased by 6.7%, from 7.7 trillion soums in 2016 to 17 trillion soums in 2022. The number of operating enterprises in the region increased by 25% from 19.4 thousand in 2016 to 24.1 thousand in 2022. In the field of infrastructure development, 50 km of gas pipelines and 3,304 km of water supply networks were laid in 2016-2020.

433. In five years, about 109 thousand jobs have been created in the Khorezm region. During the same period, 3,930 thousand square meters of housing were commissioned in the region, 12.3 thousand places were created in preschool institutions, 45.9 thousand places in schools, 2.2 thousand hospital beds. 685 investment projects with a total value of 9.3 trillion soums will be implemented in the Khorezm region, which will create 14,909 new jobs.

Land use and Ownership

434. The project sites are a combination of populated areas and agricultural lands represented by typical urban and agro- biocoenosis. The road reconstruction will be limited to existing roads only and the existing width of the roads will be maintained.

435. In general, almost all reconstructed road sections pass through populated areas. On both sides there are residential buildings, social facilities, business facilities mixed with agricultural fields and gardens, there are also greenhouses. Also, the road sections are crossed by multiple canals and bridges. A large number of trees grow along the roads.

Vulnerable/Disadvantaged Group/Persons

436. The project area includes 9 districts and more than 30 makhals. The main vulnerable/disadvantaged groups include the unemployed in the project area, Women who head families, large families (more than 5 people), low-income families, the disabled, elderly people who have no one to take care of, etc.

Cultural Heritage

437. The province's name comes from the Persian language: the area has been known as Khwarazm, *Khwarezm, Khwarezmia*, and *Khwarazm*. It is also known as *Chorasmia* in Greek and *Xvairizem* in Old Persian. The name "*Khorezm*" is the existing name of the province. The etymologists believe that the Iranian compound stands for *"kh(w)ar*" as "*low*" and "*zam*" as "*land*." *Khwarazm* is the lowest region in Central Asia (except for the Caspian Sea to the far west), located on the Amudarya River delta. Plains and small hills occupy the entire province territory, justifying the name of the land.

438. The area has ancient roots. Khorezm formed part of the empire of Achaemenian Persia (6th – 4th century BCE). The Arabs conquered it and introduced Islam to this area in the 7th century CE. From the late 11th to the early 13th century, Khorezm was ruled by the Kharezm Shakh Dynasty. After that, the territory was led by the Mongols, Timurids, and Shaibanids until the 16th century, when it became the Khiva Khanate under the Ilbars Dynasty. Since 1717, Khiva Khanate has experienced Russian invasions, and in 1873, it was conquered and made a Russian protectorate until 1920. After the Russian Revolution of 1917, the Khiva Khanate was abolished and replaced by the Khorezm People's Soviet Republic (1920-1924), which was subsequently dissolved and incorporated into the Soviet Union. Later, in 1938, the area was divided between Uzbekistan and Turkmenistan. 31However, only the land on the Uzbek side has retained its original name, Khorezm, becoming Khorezm Province of Uzbekistan.

439. The team conducted desktop and field surveys and revealed no UNESCO world heritage in the project districts. However, there are a number of ancient settlements included in the national cultural and architectural heritage list. The Regulation of Cabinet of Ministers of Uzbekistan No. 846 of October 04, 2019 32specifies the list of national archaeological and cultural heritage sites in Khorezm Province. The legal act also provides for Khorezm Province Cultural Heritage Department as overseeing authority for these archaeological and cultural heritage sites (ACHS).

Table 25 Archaeological and Cultural Heritage Sites in Khorezm Province

No.	Site	Category	Construction Period	Location
1.	Kalajik (David-Kala) Ensemble of Buildings	Archaeologic site	IV-III bc	Kalajik Community, Bagat District
2.	Kirqkiztepa Village	Archaeologic site	IV-II bc; IX-X ad	Khorazm Community, Bagat District

31 https://en.wikipedia.org/wiki/Khwarazm, https://www.britannica.com/place/Khwarezm

32 Regulation of Cabinet of Ministers of Uzbekistan No. 846 of October 04, 2019 "About approved list of national cultural heritage objects", https://lex.uz/ru/docs/4543266

3.	Koshkaqirgan Village	Archaeologic site	VII-VIII ad	Khorazm Community, Bagat District
4.	Mausoleum of Islam Sheikh Baba	Architectural heritage	XIX ad	Mirishkor Community, Bagat District
5.	Tomb of Sheikh Odina Muhammad Khorazmiy	Architectural heritage	1826	Dekhkonobod Community, Bagat District
6.	Tomb of Osman Said Bobo	Architectural heritage	XIV – XIX ad	Community, Gurlen District
7.	Zorlik Eshanbabo Castle	Archaeologic site	VII – XIV ad	Kenegas Community, Kushkupir District
8.	Khandakkul Village	Archaeologic site	IX – XIII ad	Kenegas Community, Kushkupir District
9.	Kukhnakala Castle	Archaeologic site	IV – II bc	Ashirmat Community, Kushkupir District
10.	Ashurmattepa Cemetery	Archaeologic site	XII – XIV ad	Ashirmat Community, Kushkupir District
11.	Imorat Baba Complex of Mosque, Imorat Baba Mausoleum, Mir Muhammad Aziz Mausoleum, and Said Shahoat Aziz Mausoleum	Architectural heritage	1795	Shikhmashkhad Community, Kushkupir District
12.	Tuzlaq Village	Archaeologic site	IV-III bc; IX — XIII ad	Amir Temur Community, Urgench District
13.	John Kharos Bobo Mausoleum	Architectural heritage	XVII – XIX ad	Goybu Community, Urgench District
14.	Ulli Khovli Ensemble of Buildings	Architectural heritage	XVIII – XIX ad	Goybu Community, Urgench District
15.	Tomb of Shovod Khoja Baba	Architectural heritage	XVII – XVIII ad	Koravul Community, Urgench District
16.	Fortress City of Khazarasp	Architectural heritage	IV – II bc	Sulaimon Kala Community, Khazarasp District
17.	Chingiztepa Ensemble of Buildings	Archaeologic site	V – VII ad	Shorlovuk Community, Khazarasp District
18.	Sandiqli Baba Town	Archaeologic site	VII – VIII ad and IX – XII ad	Ovshar Community, Khazarasp District
19.	Tuprok Kala Town	Archaeologic site	IV – III bc	Khazarasp District
20.	Sartarosh Caravanserai Ruins	Archaeologic site	X ad	Khazarasp District
2	Meshekli Kala	Archaeologic	V bc and XII-XIII ad	Khazarasp District

1.		site		
22.	Karatosh (Khumbuz) Tepa	Archaeologic site	VII bc – IV ad	Shorlovuk Community, Khazarasp District
23.	Tashsaka Monument	Archaeologic site	V – I bc	Ovshar Community, Khazarasp District
24.	Tashmazar Mound	Archaeologic site	XVI – XV bc	Khazarasp District
25.	Uch Uchak Mazar Mound	Archaeologic site	X – IV bc	Khazarasp District
26.	Naus Tepa	Archaeologic site	V bc	Khazarasp District
27.	Tash-Kala Caravanserai Ruins	Archaeologic site	XII-XIII ad	Khazarasp District
28.	Eshan Rabat Caravanserai Ruins	Archaeologic site	IX-XIII ad	Khazarasp District
29.	Sardoba	Archaeologic site	XV ad	Khazarasp District
30.	Muzrab Shah Khorazmiy Mausoleum	Architectural heritage	XIV – XIX ad	Khazarasp District
31.	Djuma Masjidi Mosque	Architectural heritage	XIV ad	Sulaimon Kala Community, Khazarasp District
32.	Tomb of Ismail Eshan Bobo	Architectural heritage	XVI – XIX ad	Yangibazar Community, Khazarasp District
33.	Kranzh Bobo Ensemble of Buildings	Architectural heritage	XVI ad	Mukhamon Community, Khazarasp District
34.	Tanobli Auliya Mausoleum	Architectural heritage	XIX ad	Mukhamon Community, Khazarasp District
35.	Tomb of Shaikh Kosim	Architectural heritage	VII ad	Yangibazar Community, Khazarasp District
36.	Mausoleum of Shakhid Baba	Architectural heritage	XIV – XIX ad	Karvak Village, Yangiobod Community, Khazarasp District
37.	Tomb of Shaikh Hussein	Architectural heritage	XIV – XIX ad	Ovshar Community, Khazarasp District
38.	Mausoleum of Shah Pir Baba	Architectural heritage	XVI – XIX ad	Oybek Community, Khazarasp District
39.	Monument of Allaberghan Gawdonboy	Architectural heritage	1910	Galaba Street, Khanka District Centre

40.	Said Ota Ensemble of Buildings	Architectural heritage	1766	Khanka District Centre
41.	Vayagan Bobo Tepa and Tomb	Archaeologic site	II – XIV ad	Chukli and Ogahyi Communities, Shavat District
42.	Kiyot Settlement (Kat Kala Castle) Ensemble of Buildings	Archaeologic site	IV-III bc, VII – XIII ad, XVII – XIX ad	Katkala Community, Shavat District
43.	Tuprok Kala Settlement	Archaeologic site	III – IV ad	Chukli Community, Shavat District
44.	Tomb of Vayagan Bobo	Architectural heritage	XVI — XIX ad	Chukli and Ogahyi Communities, Shavat District
45.	Tomb of Yusuf Khamadonyi	Architectural heritage	XIX ad	Beshmergan Community, Shavat District
46.	Olma Otishgan Ensemble of Buildings	Architectural heritage	IV-III bc, I — XIV ad	Kattabog Community, Yangiarik District
47.	Ostona Tepa	Architectural heritage	IX – XIV ad	Ostona Community, Yangiarik District
48.	Tomb of Sheikh Mukhtar Vali	Architectural heritage	XIV ad	Ostona Community, Yangiarik District

(Source: https://lex.uz/ru/docs/4543266)

440. The table above shows that most ACHSs are in the Khazarasp district and the smallest registered ACHSs are in the Khanka and Yangiarik districts. Other ACHSs are in Urgench,Bagat, Kushkupir, and Shavat districts. All the mentioned ACHS are immovable archaeological and cultural assets.

ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATE MEASURES

The project's anticipated environmental and social impacts were reviewed at the three stages – pre-construction, construction and operation stages.

Pre-construction stage

Direct Impacts

441. During the pre-construction stage, the following aspects may impact on the effectiveness of implementation of environmental and social safeguards during the whole project cycle: (i) project design and procurement procedure, (ii) the conduct of bidding and contracting processes with consideration of environmental and social aspects, (iii) institutional set up for environmental and social performance, and (iv) receiving all required permissions.

442. Civil works will be implemented inside settlements with already developed road networks, and outside of the settlements. Most reconstruction works will be within the alignment of existing roads, and for implementation of these work works no need of obtaining approvals from agencies (gas supply, communication, etc.) prior to the beginning of civil works.

443. Road design, pedestrian safety, speed limits, speed bumps etc, if not designed properly can have a negative impact for population during the expluatation period. The task of designing the road infrastructure should include all the necessary aspects to increase safety. Engineers are responsible for ensuring that roads and highways are as safe as possible for all road users. This is an important job that requires qualified and experienced professionals to ensure that the needs of all road users are met. The use of international best practices in design is essential to ensure the necessary safety measures for road users. Also, in order to assess the risks during the design, it is necessary to conduct a survey of the current situation and safety measures before the reconstruction of the road, consultations with stakeholders, in particular pedestrians, drivers, traffic police, etc.

444. Without proper assessment of anticipated risks and developing ESMPs after finalizing the project detailed design the project may lead to the environmental and social risks. Screening procedures defining the documents to be prepared, and the contents of the ESMP, are provided in Annexes 12.3, 12.4. Therefore, prior to commissioning of the project works on selected sub-projects, ESMPs will be developed, and submitted to the PIU and then to the AIIB for non-objection.

445. National PEISs (ZVOSs) will be prepared by the PIU Technical Consultant in the1 quarter of 2025 and submitted to the MEEPCC in Karakalpakstan and Khorezm region. If substantial changes in the project design, or additional sub-projects are subsequently included in the projects, a new national EIA will need to be developed and approval received from the MEEPCC.

446. Permissions to cut or replant trees need to be obtained from the MEEPCC prior to the commencement of civil works, as indicated in Decrees of President of RUz #46 (2021) and # 199 (2023). Failure to comply with these requirements will result in penalties, potentially including the suspension of the project.

Construction stage

Physical resources

Impact on air quality

Direct Impacts

447. In most cases, the reconstruction/rehabilitation of local roads will traverse through populated areas along roads, within the width of existing roads. During the construction stage, pollutant emissions (SO2, NOx, CO and dust) will be generated due to earthworks, reconstruction/demolishing activities, and the movement of vehicles. It is expected that dust pollution will occur more frequently during windy weather and due to any high-speed truck movements inside settlements.

448. Equipment and vehicles with improper technical characteristics or in poor condition may also lead to pollution by exhausted gases. Improper waste management, particularly the burning of construction and domestic wastes may lead to air pollution.

449. For those road routes located next to living houses additional measures will be needed such as: development of a Site Specific Environmental and Social Management Plan (SSESMP) with consideration of the locations of sensitive receptors (schools, kindergartens), and specific dust protection measures during dismantling of the road surface and reconstruction works (including, for example, watering and the installation dust prevention screens)..

Indirect Impacts

450.The quality of crops (fruits, vegetables) and other plants growing near the construction sites may also be affected by indirect air pollution impacts. Settled areas may also suffer from negative economic impacts and impacts to the functioning of ecosystems.

Cumulative Impact

451.Cumulative impacts may also occur in project districts when the reconstruction of the local roads will be implemented in parallel with other project and construction works (for example construction of different buildings and other networks or during the windy weather). In that case, amount of discharging air pollutants emissions could significantly increase.

Increasing of noise level

Direct Impacts

During the reconstruction works, the following activities could generate noise:

- Demolition works of existing road surface
- Earth moving activity for leveling roads
- Replacement of bridge structures
- Movement of vehicles used for material transport

452.Reconstruction works conducted in populated areas with sensitive receptors (schools, kindergartens, and hospitals/polyclinics) may cause excessive noise levels, above the allowed parameters.

453.Project workers will be exposed to noise from construction machinery as well as, potentially, hand-arm vibration from hand-held power tools, or whole-body vibrations from surfaces on which a worker stands or sits.

Indirect Impacts

454.Indirect impacts from noise may also impact on the functioning of sensitive ecosystems. Since, in most of the cases, the construction sites are located remotely from the sensitive natural areas, obvious indirect impacts from noise are not anticipated.

Cumulative Impacts

455.Cumulative impacts may occur in project districts when the reconstruction of local roads will be implemented in parallel with other project and construction works. In that case, noise levels and consequent impacts could increase significantly.

Impact on water resources

Direct Impacts

456.Surface waters may become polluted due to the improper placement of excavated soil and road surface, poor management of construction camps, improper storage of construction materials, leakage of fuel and lubricates from construction machinery, and washing of vehicles and equipment without propermaintenance. These risks may occur when reconstruction works are implemented close to waterways or when rehabilitated road routes cross waterways.

457.In accordance with preliminary data received from the PIU and during initial site visits, the reconstructed/ rehabilitated roads networks could cross different canals at several locations. A major overhaul (12 units) and complete replacement of bridge structures (144 units) are planned in Khorezm region and Karakalpakstan.

Indirect Impacts

458.The pollution of water in waterways will lead to a deterioration of the water quality, which will potentially impact on the health of people who may use the canals in downstream areas for recreation purposes or irrigation.

459.In waterways with a permanent water presence and used for fisheries, any polluted water could cause ecosystem degradation and the pollution of fishes which further could be consumed by people.

Cumulative Impact

460.Cumulative impacts may occur in project districts when the reconstruction of local roads will be implemented in parallel with other project and construction works (for example construction of different buildings and other networks). In such cases, impacts on water quality could significantly increase.

Ground water

Direct Impacts

461.The location of any construction camps on the territory of the project ground water intakes could potentially increase the pollution of groundwater which is used for drinking purposes.

462.The improper construction and management of labor camps, including improper maintenance, refueling, and improper collection and disposal of domestic wastewater, may also lead to groundwater pollution.

Indirect Impacts

463.The pollution of groundwater may also lead to the pollution of water in wells which are used by local population for drinking or communal use, negatively impacting on their health.

Cumulative Impact

464.There are no other activities anticipated on the project site which may lead to the pollution of groundwater. Therefore, cumulative impact is considered to be negligible.

Blockage of or Damage to Canals and Drainage Channels

Direct Impacts

465.The road construction activities particularly near these irrigation canals and drainage channels and also the bridge construction activities can potentially cause damage to the side slopes of the canals and drainage channels and even block them. The piling of construction may require diverting of water or temporary cofferdam in the canals and drainage channels. The damage to or blockage of irrigation canals can cause reduction of water availability for irrigation purposes thus causing loss of agriculture produce. Similarly, any damage or blockage of drainage channels can cause local flooding, adversely affecting the road as well as the nearby cultivation fields.

Indirect Impacts

466.The pollution of water in waterways will lead to a deterioration of the water quality, which will potentially impact on the health of people who may use the canals in downstream areas for recreation purposes or irrigation.

467.In waterways with a permanent water presence and used for fisheries, any polluted water could cause ecosystem degradation and the pollution of fishes which further could be consumed by people.

Cumulative Impact

468.Cumulative impacts may occur in project districts when the reconstruction of local roads will be implemented in parallel with other project and construction works (for example construction of different buildings and other networks). In such cases, impacts on water quality could significantly increase.

Impact on soil

Direct Impacts

469.The main anticipated impacts on soil during the construction stage will be the disturbance or loss of topsoil near the reconstructed roads, its compaction, and pollution.

470.For the passage of storm water during the installation of trays, metal pipes are laid. For pipe lying works, earth excavations, pipe laying and the backfill of material including compaction will be implemented. Excavated soil will be temporarily stored alongside each trench and refilled after pipe lying. Gravel will be used as a bed for the pipes, and excavated soil will be placed back in each trench and compacted.

471.In settlements and outside settlements, earthworks are carried out by filling the earthbed to the design dimensions and filling the roadsides. The connected soil of the quarry will be used for earthworks. Project activities may need significant quantities of soil, which need to be obtained from borrow areas. These borrow areas may cause a number of adverse impacts, including loss of fertile soil, damage to cultivation fields, soil erosion, devaluation of land value, and safety hazards.

472.Gravel and sand will be required for pipe laying, for the rehabilitation of damaged roads and other project activities. Unauthorized excavations of such construction materials and improper restoration works on used carriers could negatively impact on soil.

473.The maintenance of machinery and refueling of techniques in non-appropriate and not-equipped places could also lead to the pollution of soil.

Indirect Impacts

474.The pollution of soil could lead to the pollution of groundwater which is used by population for drinking or domestic use.

475.Unauthorized excavation of soil especially from agricultural lands may lead to losses in crops and the consequent income of land users operating in the project area.

Cumulative Impact

476. There are no other activities to be conducted on the project site which may lead to the pollution ofgroundwater. Therefore, cumulative impacts are considered to be negligible.

Impact on borrow areas

Direct Impacts

477. The road constructions activities may need significant quantities of soil, which need to be obtained from borrow areas. These borrow areas may cause a number of adverse impacts, including loss of fertile soil, damage to cultivation fields, soil erosion, devaluation of land value, and safety hazards.

Indirect Impacts

478.The pollution of soil could lead to the pollution of groundwater which is used by population fordrinking or domestic use.

479.Unauthorized excavation of soil especially from agricultural lands may lead to losses in crops andthe consequent income of land users operating in the project area.

Cumulative Impact

480. There are no other activities to be conducted on the project site which may lead to the pollution of soil Therefore, cumulative impacts are considered to be negligible.

Waste management

481.During the construction and reconstruction works, both municipal/general waste from the site offices, construction camps, and possibly hazardous wastes fromthe items of machinery on site and dismantling works, will be generated.

Site Clearance and Restoration

482.After the completion of the construction activities, the left-over construction material, debris, spoils, scraps and other wastes from workshops, and camp sites can potentially create hindrance and encumbrance for the local communities in addition to blocking natural drainage and or irrigation channels.

Hazardous construction wastes

Direct Impacts

483.During the construction phase, the following hazardous wastes will be generated from vehicle operations and maintenance: engine, hydraulic and transmission oils along with oil filters and absorbents. In the case of the improper handling and disposal of such materials, the pollution of soil, ground and surface water may occur. Along with this, such materials are hazardous to human health. In addition, there is also a possibility of the presence of asbestos materials in existing pipes and structures. The project provides for the disassembly of existing asbestos, metal, cast iron pipes and reinforced concrete links. Instead of disassembled pipes, the project provides for the installation of metal pipes.

Indirect Impacts

484.The pollution of soil could lead to the pollution of groundwater which is used by the population for drinking or domestic use. Unauthorized excavations of soil, especially from agricultural lands, may lead to losses in crops and the subsequent income of land users operating in the project area.

Cumulative Impact

485. There are no other activities to be conducted on the project site which may lead to the

pollution ofgroundwater. Therefore, cumulative impacts are considered to be negligible.

Non-hazardous wastes

Direct Impact

Municipal wastes

486. MSWs and wastewater will be generated at the construction and camp sites. Mainly this is rubbish, plastic or glass bottles, glasses, waste food, etc. Improper wastes management may cause the spread of infectious diseases, and the emergence of insects and parasites in construction camp sites. Inaddition, it may lead to conflicts with the local population.

Construction wastes

487. Construction wastes will be generated during the demolition of existing roads surface, disassembly of existing asbestos, metal, cast iron pipes and during the reconstruction of bridges and structures. These wastes may consist of asphalt and concrete, reinforced concrete structures, pipes, etc. In addition to these wastes, used welding rods, packaging materials and other construction waste will be formed.

Scrap materials

488. In some areas, old, rehabilitated iron pipes and other demolished metal construction waste will be sold to the respectivedisposal company – Vtorchermet.

Indirect Impacts

489. Improper waste management, especially domestic wastes, may lead to the pollution of groundwater and spreading of diseases among the population.

Cumulative Impact

490. Cumulative impact may occur in project districts when the reconstruction of local roads will be implemented in settlements with improper waste management. The improper and non-timely disposal of wastes from construction sites and adjusted areas may lead to a situation where the local population disposes of their wastes in the same places. This may lead to a substantial increase in the magnitude of the impact.

Biological resources

Direct Impact

491.The project sites are a combination of populated areas and agricultural lands represented by typicalurban and agro- biocoenosis. Some impacts may occur during reconstruction of local roads. Although the reconstruction works will be conducted within existing roads alignment, there is a possibility that some bushes and trees will be damaged.

492.In the case of thecutting of trees for construction purposes all valid regulations on this topic have to be fulfilled.

493.The implementation of civil works related with major repairs or complete replacement of bridge structures, and thelocation of campsites close to canals, may impact on the aqua fauna of the canals. The locations of critical habitats were not identified withinthe project areas, project sites are a combination of populated areas and agricultural lands. However, if during the detailed design stage of the project the location of roads will be changed,then supplementary biodiversity screening needs to be undertaken.

Indirect Impacts

494. Indirect impacts may occur if vegetation will be cut without proper monitoring, which may lead tothe unnecessary loses of trees and vegetation. In case of commercial use of these trees, population mayhave economical losses.

Cumulative Impact

495. Cumulative impacts may occur in project districts when the project works will be implemented without consideration of the entire works schedule and areas necessary for construction activities.

Socio-economic aspects

496. Construction works may have both positive and negative effects on socio-economic aspects.

497. Reconstruction of public roads sections of local importance in the Republic of Karakalpakstan and the Khorezm region will ensure:

- increase in freight and passenger traffic;
- improving the efficiency of road transport;
- reducing the cost of transportation by improving the quality of roads;
- saving time for the transportation of passengers and for the passage of goods in transit;
- improving the comfort and convenience of trips;
- increase in road capacity;
- improving traffic safety;
- reduction of maintenance costs;
- reduction of vehicle wear due to poor road quality;
- the growth of entrepreneurial and business activity;
- improve the quality of life and the level of social activity of the population.

Impacts on livelihoods.

329. All road reconstruction works will be conducted within the existing roads alignment. In populated areas, the project provides for the construction of 1.5m wide sidewalks on both sides of roads and bus stops.

330. The places for sidewalks and bus stops should be selected with consideration of two main conditions: (i) to minimize impacts on agricultural lands and crops, and (ii) to ensure compliance with national standards on buffer zones for various communications and facilities.

331. Nevertheless, if during the detailed design stage, any facilities will require the land acquisition, due diligence of social aspects including land acquisition and resettlement aspects will need to be implemented in accordance with the Project RPF.

332. The cutting of trees may also lead to a loss of income, especially for trees of commercial value. The quality of crops (fruits, vegetables) and other plants growing around construction sites may also be affected by indirect air pollution impacts.

333. The reconstruction of local roads will be implemented mostly inside of the populated area in project districts. Therefore, access to some commercial facilities (shops, service centers) may be limited during reconstruction works, causing decreasing of population income.

334. Besides the economic impacts, civil works may also create risks related to the safety of the population. These risks are described in the following paras. 33The impacts related to the potential disturbance of the population caused by noise from construction and mitigation measures are presented in paras above.

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33 Community health and safety

Local economy.

335.Other, more indirect impacts include the possible need for additional housing, catering, and othertypes of services. These economic benefits will likely contribute to overall project positive impacts.

336.Personnel with different qualifications will be required for construction works, and local population could be hired for some of activities, resulting in the creation of new jobs.

Influx of Workers

337.The influx of workers from other parts of the country can potentially cause conflict between the project personnel and the local community. This could be because of differences in culture, religion, social norms and acceptable social behavior. Any such impact can be detrimental to the project since it can potentially cause tension between the project and local communities and even disruption of construction works. Given the cultural and social attributes in Uzbekistan and many unskilled workers for this project will be from Karakalpakstan, the risk of social conflict due to labor influx is considered as moderate.

338.The World Bank Guidance Note34could be used to address potential impacts caused a Code of Conduct for all sitepersonnel and provide training on the Code of Conduct. Awareness raising materials such as posters and signage will be used as appropriate. All site personnel will be provided awareness and training to prevent communicable diseases, sexually transmitted infections, Human immunodeficiency virus (HIV)infections / Acquired Immune Deficiency Syndrome (AIDS). Privacy of women will be respected; routesand places used by them will be avoided as far as possible. If the measures are implemented, the residual impact is estimated as low.

Forced and child labor Issues

339.The national labor legislation strictly prohibits the use of forced labor. If any contractor is identifiedusing forced labor, the PIU should report the case to the Ministry of Employment and Labor Relations(MoELR) and actions will be taken, according to national legislation. In addition, the PIU has the right tosuspend work or payments if the contractor is in breach of any of its obligations to implement an ESMP.This will also be addressed through training for PIU, Karakalpak and Khorezm Territorial Department of Motorways and Contractors. Nochild labor will be engaged by the project or its contractors.

Gender Issues- GBV and SE/SHA

340.The positive effect from the project to women is related to the access to road and transport services, increasing of women's mobility, less constraint faced in accessing transport facilities and concerns on road safety (pedestrian crossing facilities, public lighting, sidewalks, shelters and bus stops).

341.But at the same time construction activities can potentially affect the women activities and movement. The temporary closure of streets and roads will affect women's mobility and their access to social facilities (shops, pharmacies, kindergartens and schools). Also, the accumulation of male workers can cause concern among girls and women when moving early in the morning and in the evening, as well as in deserted places.

342.The labor migration and temporary settlement of laborers in the project brings along GBV risks. Since the main GBV risks associated with the Project area Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH) The risk of gender-based violence is one of the most critical adverse social impacts that the Project needs to consider thoroughly.

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34 http://pubdocs.worldbank.org/en/863471511809509053/ESS2-FactSheet-WB-ESF.pdf.

343. The World Bank Guidance Note on gender-based violence (GBV) will be used to address potential impacts caused by temporary project induced labor influx;

344. All workers will be required to read and sign a Worker Code of Conduct which will be explained verbally. The code of conduct prohibits the following and which is subject to disciplinary action: (i) harassment, gender-based violence and abuse of any kind will not be tolerated; (ii) discrimination based on personal characteristics is prohibited to include but not limited to gender, race, nationality, ethnic, social and indigenous origin, religion or belief, disability, age, or sexual orientation.The grievance mechanism also includes a procedure to deal with GBVH grievances.

345. Specific engagement measures (such as focus group discussions on gender issues) will be undertaken with women groups including local women representatives, women Community Based Organizations (CBOs) and other to ensure inclusiveness in representation of views.

346. The needs assessment, development initiatives and interventions will be identified and implemented in consultation and collaboration with female stakeholders (such as women CBOs).

347. All subcontractors and suppliers will be required to submit company policies on at least equal opportunities and GBVH.

Community Health and Safety

348. Inadequate lighting and fencing of construction sites inside of settlement areas can be dangerous for pedestrians and vehicles, especially during the nighttime. Increasing traffic due to truck and other vehicle movements to construction sites, and the temporary closing of roads during road reconstruction inside settlements may also cause inconveniences for the local population as well. In addition, road works will cause temporary blockages of household vehicular access.

349. The untimely and inefficient disposal of solid waste and improper sanitary conditions generated by construction workers at construction sites may cause pollution of the surrounding environment and affect the health of local people.

350. During the construction phase, traffic will have the potential to impact on local community safety, workforce safety and traffic flows in the project sites.

351. There could also be some social problems due to the irresponsible behavior of the outside work force such as gambling, alcoholism and disrespect to local people and their culture. Cultural interference workers with local communities may cause HIV and sexually communicable diseases spreading in case of law awareness about these diseases among workers and community.

Traffic disturbance

352. The following activities during the construction works could be significant sources of impact on the health and safety of the personnel and public:

- Movement of the construction equipment to and from construction sites (bulldozers, excavators, other construction and excavation equipment, other means of transport and mechanisms);
- Loading/unloading operations on roads and access roads to the project site (construction machinery and means of transport, forklifts);

- Transportation and logistics (delivery of raw and other materials, fuel and lubricants, other types of transportation).
- Transportation of project workers.

353. In addition to causing a nuisance for the population, increasing traffic will also increase the potential of road accidents. A movement of heavy tracks may destroy or deteriorate conditions of roads those will be not under the reconstruction inside settlements.

Disturbance to public utilities (electricity, telecom cables, gas pipes and etc.)

354. Before the start of excavation work for the reconstruction of public roads, the project provides for the following works:

- on the construction of enclosures for engineering communications;
- reconstruction of gas pipelines;
- reconstruction of power lines 0.4kW; 0.6kW; 10kW;
- rearrangement of communication lines.

355. All these works can lead to suspensions and interruptions in power supply, gas supply and provision of communication services to the population.

Cultural heritage

356. The vegetation clearing and earthmoving activities during construction/reconstruction works may affect the archaeological heritage in the project areas. According to the preliminary data, there are several cultural sites within the project districts; however, they are not located in the actual project areas. Considering the fact that the locations of project roads may change, there is some Cultural Heritage Committee for the presence of cultural sites and their statuses and the Contractor will be required to follow relevant national regulations and Chance find procedure that shoud be developed before construction activities starts.

Occupational Health and Safety

357. Construction activities such as site preparation, excavation, asphalting/concreting, operation of construction machinery and equipment, vehicular traffic, and the use of temporary workers' accommodation pose potential risks to the health, safety, security and therefore wellbeing of construction workers. Health and safety issues associated with the use of temporary accommodation sites include those relating to sanitation, disease, fire, cultural alienation, sleeping space, quality and quantity of food, personal safety and security, temperature control and recreation, amongst others.

358. Some of the Occupational Health and Safety (OHS) risks which are likely to arise during the construction phase of the Project, and are typical to many construction sites, include: exposure to physical hazards from working on heights, use of heavy equipment including cranes; trip and fall hazards; exposure to dust, noise and vibrations; falling objects; exposure to hazardous materials; and exposure to electrical hazards from the use of tools and machinery.

359. Workers on the Project, particularly sub-contracted construction workers, are vulnerable to risks to their wellbeing, health and safety on a daily basis.

Stakeholder Engagement – GRM

360. Stakeholder consultation/participation and GRM during various stages of developmental projects helps to improve decision making and ultimately leads towards sustainable development.

361. For stakeholders, the consultation and GRM process is an opportunity to obtain project

information, to understand its potential impacts, to raise issues and concerns, and ask questions. For the project proponents, the consultation process offers an opportunity to understand the stakeholders and their concerns about the project, their needs and aspirations, and also their suggestions that can potentially help shape the project and its design. Listening to stakeholders' concerns and feedback can be a valuable source of information that can improve project design and outcomes and help the project proponent to identify and control external risks.

Operation stage

Maintenance of the local roads

Impact on the air and noise level

362. Impacts on air quality and noise levels during the project operation phase could be caused by rehabilitation works which may be required during the maintenance of damaged parts of roads. However, taking in account the quality, methods and lifetime of the reconstructed roads, the probability of this impact is considered to be negligible.

363. After the reconstruction of roads, vehicular traffic is expected to increase, as a result of which vehicular emissions and ensuing atmospheric pollution are likely to increase along the road. This will have significant impacts on the sensitive receptors like schools, hospitals and kindergartens.

364. During the operation phase, noise and vibration will be generated mainly from heavy trucks traffic on the roads. The noise will have considerable impacts on communities living along the road, particularly for the sensitive receptors. The vibration is likely to affect the nearby buildings and structures.

Increasing of noise level

365. With the increase in the traffic volume and vehicular speed, risk of more noise and vibration will also increase.
366. The project road pass through many settlements also and also some sensitive receptors. At such locations, the increased volume of the noise and vibration will cause more inconvenience to the local population. Reducing the impact of noise generated by vehicle tires on residential areas to acceptable hygienic requirements in modern conditions is a complex scientific and technical problem that can only be solved by complex means.
367. These include the rational acoustic layout of residential areas, the creation of noise-proof landscaping of streets, the improvement of the soundproof qualities of buildings, the development of noise-proof shielding structures, etc.
368. Noise-proof landscaping of highways is a very effective urban planning measure to reduce the impact of traffic noise on residential areas (the highest noise reduction effect is achieved when landscaping is combined with various shielding structures). The level of noise reduction by green spaces depends on the type of green spaces, their width, the presence of shrubs, the time of year , etc.
369. Noise protection measures also include, first of all, measures to reduce noise levels by reducing the intensity and noisiness of traffic flows, improving road maintenance, using less noisy types of street coverings; ensuring rational speed on highways; ensuring, and sometimes excluding, automobile traffic, especially freight, in the central areas of the city and on residential streets. buildings (construction of pedestrian zones, withdrawal of transit vehicles from the bypass road, establishment of one-way traffic, restriction of night traffic, etc.)

Table 26 Summary of environmental and social impacts

#	Project Components and Activities	Expected Environmental and Social Risks And Impacts	Receptors (Low, Medium, High)	Magnitude (Negligible, Low, Medium, High)
1.	**Pre-construction stage**			
	(i) Project design and procurement procedure, (ii) the conduct of bidding and contracting processes with consideration of environmental aspects, (iii) institutional set up for environmental performance, and *(iv) receiving all required permissions.*	• ESMP for each project district has not developed or does not consider the final design. • Permissions from relevant agencies are not obtained. • Population H&S risks if road design, pedestrian safety, speed limits, speed bumps etc, is not designed properly • Bidding documents and Contractor contract are not fully cover environmental and social issues	Medium or high Medium or high Medium or high	Medium or high Medium or high Medium or high
2	**Construction stage**			
	- Construction of artificial structures (construction and repair of reinforced concrete bridges, construction of metal pipes and extension of reinforced concrete pipes, installation of trays) *-Reconstruction of engineering structures (installation of enclosures for engineering communications, reconstruction of gas pipelines, reconstruction of power lines 0.4 kW; 0.6 kW; 10kW, reconstruction of communication lines.)* *- Construction of the roadbed;* *- Installation of asphalt pavement with surface drainage;* *- The arrangement of the road (installation of fencing and road signs, application of road markings, sidewalks, bus stops, lighting.)*	**Air Quality** • Pollutant emissions (SO_2, NOx, CO and dust) will be generated due to earthworks, construction/demolishing activities, and the movement of vehicles. • Improper waste management, particularly the burning of construction and domestic wastes may lead to air pollution. • Asbestos dust generated during dismantling of old pipes could also pose a health hazard to people living in houses near construction sites. • Indirect air pollution impacts may affect the quality of crops (fruits, vegetables) and other plants growing around constructionsites. • Parallel implementation of different construction works in project districts may significantly increase amount of discharging air pollutants emissions.	Medium or high Medium or high High Medium or low Medium or low	Medium Medium Medium High High

	Construction and reconstruction works; earth moving activity/digging trenches; pipeline laying; movement of vehicles used for material transport; demolitionworks;	**Noise Pollution** • Construction works conducted in populated areas with sensitive receptors (schools, kindergartens, and hospitals/polyclinics) maycause excessive noise levels, above the allowed parameters. • Project workers will be exposed to noise from constructionmachinery as well as, potentially, hand-arm vibration from hand- held power tools, or whole-body vibrations from surfaces on which a worker stands or sits. • Parallel implementation of different construction works in project districts may significantly increase noise level.	High Medium and high High	Medium Low Medium
	Construction/ reconstruction works occurred close to waterways; construction and repair of reinforced concrete bridges.	**Surface Water Resources Quality** • Surface waters may become polluted due to the improper placement of excavated soil, poor management of construction camps, improper storage of construction materials, leakage of fuel and lubricates from construction machinery, and washing of vehicles and equipment without proper maintenance. • The pollution of water in waterways will lead to a deterioration of the quality of water, which will potentially impact on the health of people who may use the canals in downstream areas forrecreation purposes or irrigation. • In waterways with a permanent water presence and used for fisheries, any polluted water could cause ecosystem degradationand the pollution of fishes which further could be consumed by people. • Parallel implementation of different construction works in project districts may significantly increase water resources pollution.	Medium or High High Medium or high Medium or high	Low Medium Medium Medium

	Construction camps activities	**Ground Water Quality** • The location of any construction camps on the territory of the project ground water intakes could potentially increase the pollution of groundwater which is used for drinking purposes. • The improper construction and management of labor camps(improper maintenance, refueling, and improper collection and disposal of domestic wastewater) may also lead to groundwater pollution. • The pollution of groundwater may also lead to the pollution of water in wells which are used by the local population for drinking or communal use, negatively impacting on their health.	Medium High Medium	Medium Medium Medium
	Construction of artificial structures (construction and repair of reinforced concrete bridges, construction of metal pipes and extension of reinforced concrete pipes, installation of trays)	**Soil Quality** • Unauthorized excavations of gravel and sand and improper restoration works on used carriers could negatively impact on soil. • The maintenance of machinery and refueling of techniques in non-appropriate and not-equipped places could also lead to thepollution of soil. • The pollution of soil could lead to the pollution of groundwaterwhich is used by population for drinking or domestic use. • Unauthorized excavation of soil especially from agriculturallands may lead to losses in crops and the consequent income of land users operating in the project area.	Medium Medium High Medium	Medium Medium Medium Medium

	Construction of artificial structures (construction and repair of reinforced concrete bridges, construction of metal pipes and extension of reinforced concrete pipes, installation of trays) *Reconstruction of engineering structures (installation of enclosures for engineering communications, reconstruction of gas pipelines, reconstruction of power lines 0.4 kW; 0.6 kW; 10kW, reconstruction of communication lines.)*	**Waste Management** *Hazardous waste* - engine, hydraulic and transmission oils,oil filters and absorbents • Improper handling and disposal of hazardous materials, may lead to the pollution of soil, ground and surface water. Along with this, such materials are hazardous to human health. • There is also a possibility of the presence of asbestos materials in in existing pipes and structures.	High High	Medium Medium

		(b) Non-hazardous waste - MSWs (rubbish, plastic or glass bottles, glasses, waste food, etc.); construction wastes (usedwelding rods, packing materials, and other woods); scrap materials (old, rehabilitated iron pipes) • Improper wastes management may cause the spread of infectious diseases, and the emergence of insects andparasites in construction camp sites. In addition, it may lead to conflicts with the local population. • Improper waste management, especially domestic wastes,may lead to the pollution of groundwater and spreading ofdiseases among the population. • Improper and non-timely disposal of wastes from construction sites and adjusted areas may lead to a situation where the local population dispose of their wastes in the same places.	High and medium High and medium High and medium High and medium	Low Medium Medium or low Medium

	Construction/ reconstruction works occurred close to waterways; construction and repair of reinforced concrete bridges	**Biological Resources** • Cutting trees and bushes along existing roads and canals. • The implementation of civil works along canals and canal crossings, and the location ofcampsites close to canals, may impact on the aqua fauna of the canals. • Lack of proper monitoring of vegetation may lead to the unnecessary loses of trees and vegetation	High High High	Medium or Low Medium or Low Medium

	- Construction of artificial structures (construction and repair of reinforced concrete bridges, construction of metal pipes and extension of reinforced concrete pipes, installation of trays) *-Reconstruction of engineering structures (installation of enclosures for engineering communications, reconstruction of gas pipelines, reconstruction of power lines 0.4 kW; 0.6 kW; 10kW, reconstruction of communication lines.)* *- Construction of the roadbed;* *- Installation of asphalt pavement with surface drainage;* *- The arrangement of the road (installation of fencing and road signs, application of road markings, sidewalks, bus stops, lighting.)*	**Socio-economic resources** • Creation of new jobs for local population. • The cutting of trees may also lead to a loss of income, especially for trees of commercial value. • Temporary access to some commercial facilities (shops, service centers) may be limited during construction works, causing decreasing of population income. • Civil works may also create risks related to the safety of the population. • Increasing traffic intensity increases the nuisance for the population and the potential of road accidents. **Influx of Workers and labor issues** • The influx of workers from other parts of the country can potentially cause conflict between the project personnel and the local community. **Gender Issues and GBV risks** • The labor migration and temporary settlement of laborers in the project brings along GBV risks. • The construction activities can potentially affect the women activities and movement.	High Medium or high Medium or high High High High Medium or high High	Medium or high Medium or low Medium or high Medium or high Medium or high Medium or high Medium Medium or high

	- Construction of artificial structures (construction and repair of reinforced concrete bridges, construction of metal pipes and extension of reinforced concrete pipes, installation of trays) *-Reconstruction of engineering structures (installation of enclosures for engineering communications, reconstruction of gas pipelines, reconstruction of power lines 0.4 kW; 0.6 kW; 10kW, reconstruction of communication lines.)* *- Construction of the roadbed;* *- Installation of asphalt pavement with surface drainage;* *- The arrangement of the road (installation of fencing and road signs, application of road markings, sidewalks, bus stops, lighting.)*	**Occupational and Community Health and Safety Issues** *(a) Community Health and Safety* • Inadequate lighting and fencing of construction sites inside of settlement areas can be dangerous for pedestrians and vehicles, especially during the nighttime. • Increasing traffic due to truck and other vehicle movements to construction sites, laying inside settlements mayalso cause inconveniences for the local population. and the temporary closing of roads during pipe • Temporary blockages of household vehicular access due to construction works. • The untimely and inefficient disposal of solid waste and improper sanitary conditions generated by construction workers at construction sites may cause pollution of the surrounding environment and affect the health of local people. • Some social problems may occur due to the irresponsible behavior of the outside work force such as gambling, alcoholism and disrespect to local people and their culture. • Cultural interference workers with local communities may cause HIV and sexually communicable diseases spreading in case of law awareness about these diseases among workers and community. • Movement of heavy tracks may destroy or deteriorate conditions of roads inside settlements.	High High or Medium High High High High High	Medium or Low Medium Medium or high Medium or Low Medium Medium Medium of High

		(a) Occupational Health and Safety • Violations of OHS regulations can result in personal injury or accidents. • The lack of PPE and overall OHS implementation in the Contractors budgets may lead to increasing risks of improper implementation of waste collection and disposal procedures, poor construction camp operations, and reduced living facilities for workers.	High High	Medium Medium

		Cultural heritage • The vegetation clearing and earthmoving activities during construction works may affect the archaeological heritage in the project areas	High and medium	Medium or Low
3.	**Operation stage**			
	Maintenance of the local roads	**Air Quality, noise and vibration** • Impacts on air quality and noise levels could be caused by rehabilitation works which could be required during the maintenance of damaged roads. • After the reconstruction of roads, vehicular traffic is expected to increase, as a result of which vehicular emissions and ensuing atmospheric pollution as well as noise and vibration level are likely to increase along the road.	Medium or High Medium or High	Medium or Low Medium
	Maintenance of the local roads, bridges and structures	**Surface Water Resources Quality** • Possible repairs to bridges and structures may lead to contamination of the surface waters of the canals.	High or medium	High or medium
	Maintenance of the local roads, bridges and structures	**Waste Management** *(a) Non-hazardous waste* • The operation and maintenance (O&M) activities at roads will generate wastes such as oily run-off from the road surface, spilled oil and other lubricants, broken vehicle parts such as pieces of tires, asphalt/concrete scrapping, road kills, and other similar wastes. Some of these are hazardous wastes.	High or medium	High or medium
	Maintenance of the local roads, bridges and structures	**Occupational and Community Health and Safety Issues** *(a) Community Health and Safety* • With the increase in the traffic volume and vehicular speed, risk of traffic accidents will also increase. The project road pass through many settlements also and also some sensitive receptors. At such locations, the increased traffic volume plus additional and severe risks to pedestrian and other road users.	High	High

		Climate Change • High temperatures can cause softening asphalt concrete pavement resulting in rutting and shoving. If high temperatures accompanied by drought, asphalt concrete pavement can crack becoming more vulnerable to raining water. Sensitivity of the pavement depends on asphalt binder threshold to temperatures; the binder may exhibit sensitivity if above 42°C especially combined with high truck traffic. • Heavy rain and flooding can erode paved road surface. Rain water can leak in under the pavement and damage the subgrade. Some of the damages from moisture are pavement deformations and cracking. The sensitivity of pavement depends on the pavement structure (thickness of bituminous layer). Cumulative effect appears if damages from high temperatures and heavy traffic loads are accelerated by heavy precipitation. • Droughts can promote pavement cracking • Increasing number of freeze/thaw cycles leading to deterioration of road pavement • Changes in freeze/thaw (Water seeps to the little cracks caused by regular wear and tear processes, and freezes resulting in increasing pressure underneath the road pavement surface and rising up small bubbles. When ice melting the bubbles turn into potholes under pressure of the moving vehicles)	High High or medium High or medium High or medium High or medium	High High High High High

Impact on water resources

Impact on surface water Direct Impacts

370.Possible repairs to bridges and structures may lead to contamination of the surface waters of the canals. However, taking in account the quality, methods and lifetime of the reconstructed and constructed bridges and structure near the surface water, the probability of this impact is considered to be negligible.

Indirect Impacts

371.Deterioration of water quality in water bodies in connection with repairing works creates great risks for the population using these water bodies for recreational purposes.

Cumulative Impact

372.Cumulative impacts may occur in project districts when the repairing local roads will be implemented in parallel with other construction works (for example construction of different buildings and other networks). In such cases, impacts on water quality could significantly increase.

Waste management

Non-hazardous waste

Direct Impacts

1..1.1 The operation and maintenance (O&M) activities at roads will generate wastes such as oily run-off from the road surface, spilled oil and other lubricants, broken vehicle parts such as pieces of tires, asphalt/concrete scrapping, road kills, and other similar wastes. Some of these are hazardous wastes.

Social impacts

373.The reconstructed sections of public roads of local importance in the Republic of Karakalpakstan and the Khorezm region contribute to the further modernization and development of transport infrastructure, expansion of cargo transportation, ensuring safe movement of vehicles, improving transport logistics, socio- economic development, as well as the formation of new jobs and increased employment.

Operational Health and Safety

374. With the increase in the traffic volume and vehicular speed, risk of traffic accidents will also increase. The project road pass through many settlements also and also some sensitive receptors. At such locations, the increased traffic volume plus additional and severe risks to pedestrian and other road users.

Climate Change Impact

Risks induced by climate change on the Project

375. The following potential impacts on project performance due to Climate change were identified:

- High temperatures can cause softening asphalt concrete pavement resulting in rutting and shoving. If high temperatures accompanied by drought, asphalt concrete pavement can crack becoming more vulnerable to raining water. Sensitivity of the pavement depends on asphalt binder threshold to temperatures; the binder may exhibit sensitivity if above 42°C especially combined with high truck traffic.

- Heavy rain and flooding can erode paved road surface. Rain water can leak in under the pavement and damage the subgrade. Some of the damages from moisture are pavement deformations and cracking. The sensitivity of pavement depends on the

pavement structure (thickness of bituminous layer). Cumulative effect appears if damages from high temperatures and heavy traffic loads are accelerated by heavy precipitation.

- Droughts can promote pavement cracking
- Increasing number of freeze/thaw cycles leading to deterioration of road pavement
- Changes in freeze/thaw (Water seeps to the little cracks caused by regular wear and tear processes, and freezes resulting in increasing pressure underneath the road pavement surface and rising up small bubbles. When ice melting the bubbles turn into potholes under pressure of the moving vehicles)

1 STAKEHOLDER CONSULTATIONS AND INFORMATION DISCLOSURE

1.1 Objectives of Stakeholder Engagement and Information Disclosure

498. Stakeholder engagement is fundamental for building trust with local communities. The purpose ofthis stakeholder engagement is to enable the Project to identify key stakeholders, ensure women and vulnerable people are identified early on and included in consultation activities, have access to information that is disclosed and can provide feedback via the complaints mechanism, understand the sensitivities within each stakeholder group and develop an appropriate engagement mechanism to ensure communities are aware of the Project and its impacts, and are consulted on a regular basis.

499. As per the requirements of AIIB Environmental and Social Standards (ESS) and applicable national regulations the project will enable stakeholder engagement to be undertaken in a systematic and meaningful manner, where the various stakeholder groups are able to express their individual views,opinions, and concerns, while allowing the Project to appropriately respond to them.

500. The objectives of the stakeholder engagement include:

- To identify the key stakeholders that may be affected by the Project.
- To define processes to inform the identified stakeholders about the Project and to manage stakeholder expectations.
- To understand current and potential emerging issues and to capture views and concerns of therelevant stakeholders regarding the Project.
- To provide a basis for stakeholder participation in social impact identification, prevention andmitigation including impacts and risks relating to gender
- To establish a grievance mechanism that will be implemented for the Project.

501. In Uzbekistan, public hearings as part of EIA are mandatory only for the projects belonged to Category I and II. The Resolution No. 541 35describes a procedure of conduction of public consultation.The minutes of public consultations have to be attached to the report on EIA. This project belongs to the category III. Therefore, it will not require conduction of public consultations in accordance with nationallegislation.

1.1.1 Stakeholder Identification

502. Stakeholders are typically categorized into two main groups based on their level of involvement and impact on a project. The first group includes project affected stakeholders, who are directly/indirectly impacted by the project and may experience changes to their environment, livelihood, or well-being as a result of its implementation. The second group consists of other interested stakeholders, who may have a vested interest in the project but are not directly affected by its implementation. Nevertheless, for the purposes of effective, tailored, and inclusive engagement, stakeholders of the project can be divided into the following three core categories:

- **Project affected stakeholders** – persons, groups and other entities within the Project Area of Influence that are directly/indirectly impacted (actually or potentially) by the project and/or have been identified as most susceptible to

35 Resolution of the Cabinet of Ministers № 541 "On further improvement of Mechanism of the Environmental Impact Assessment dated 07.09.2020 (last amendment № 774 dated 27.12.2021)

change associated with the project, and who need to be closely engaged in identifying impacts and their significance, as well as in decision-making on mitigation and management measures.

- **Other interested stakeholders** – individuals/groups/entities that may not experience direct impacts from the Project but who consider or perceive their interests as being affected by the project and/or who could affect the project and the process of its implementation in some way. These stakeholders could include government agencies, non-governmental organizations (NGO), or other groups with a general interest in the project's outcomes. While their level of impact may not be as immediate as project affected stakeholders, their input and support can still be valuable in shaping the project's design and implementation.
- **Vulnerable/Disadvantage groups or persons** – persons who may be disproportionately impacted or further disadvantaged by the project(s) as compared with any other groups due to their vulnerable status, and that may require special engagement efforts to ensure their equal representation in the consultation and decision-making process associated with the project.

503. The proposed project is planned to improve local road conditions in Karakalpakstan Republic Kanlykul, Kegeyli, Takhtakupyr, Shumanai, Daukhara Dfh-Borshetov, Amurdarya, Beruniy, Nukus, Karauzak, Kungrad, Muynak districts and Bagat, Gurlan,Koshkupir, Urgench,, Khiva, Khazarasp, Shavat, Yangiarik, Yangibazar districts in Khorezm region , therefore the number of project stakeholders is large and includes all project impacted settlements and organizations located in the above mentioned project districts.

504. Stakeholder identification is conducted based on available primary and secondary data information, a review of available Project documentation, input from the Project consultants, as well asbeing informed by the results of site visits. The stakeholder list will be continuously updated throughoutthe life of the Project.

505. The following list of key stakeholders have been identified and are presented in the Table 27 below:

Table 27 Identified Project Stakeholders

Stakeholder Groups	Direct/Indirect	Description of the Stakeholder
Project affected stakeholders		
Local Communities in the Project area	Direct	The local communities are expected to directly benefits from the project through improvements to the local roads, facilities, road safety, access to material and social resources. Local community residents are potential source as workforce for implementation of the project activities. Local communities within the project influence area to be affected by construction and reconstruction works and activities of the project. The activities associated with the project will directly influence the daily lives of the impacted residents.
Local companies and organizations inthe Project area	Direct	These include private businesses interested in improving the condition of roads and structures, farms that can use reconstructed roads to transport goods and workers, enterprises that can improve logistics by reducing transport costs and time spent on transportation or open new businesses (for example, trucking, public transport, taxis).

Makhalla Leaders	Direct	This stakeholder is an institution holding traditional power. It is headed by a chief/ chairman and play an important role in Uzbek community.
Schools	Direct	Most schoolchildren walk along the roads to the schools and will be impacted by the project.
Organizations and/or individuals whose assets may be impacted in connection with project activities	Direct	These include organizations (private farms, other entities) or individuals whose assets might be impacted due to project activities (both formal and informal owners).
Other Interested stakeholders		
Road Committee (RC)	Direct	Acts as the Executing Agency (EA) responsible for overall project coordination with government agencies and high-level decision-making authorities.
Avtoyulinvest" Agency (AYA)	Direct	Acts as the Implementing agency and is responsible for the implementation of the project, including the execution of works and overall management.
Main Road Department of the Republic of Karakalpakstan and Khorezm Region,	Direct	Subordinate organization of RC, the owners of the project andresponsible for project implementation, and local roads exploitation after project completion.
Local Government Organizations: ▪ Cabinet of Ministries ofKarakalpakstan Republic; ▪ Khokimiat of Khorezm region, ▪ Ministry of Foreign and TradeAffairs; ▪ Ministry of Transport of the Republic of Uzbekistan; ▪ The Agency for Strategic Reforms. ▪ Project District Khokimiats; ▪ Project DistrictLand CadastreOffices; ▪ Project District branches of the Ministry of Ecology, Environmental Protection and Climate Change(MEEPCC); ▪ Sanitary-Epidemiological Peace andPublic Health Service of Karakalpakstan, Khorezm Region and district branches; ▪ Karakalpakstan Ministry ofEmployment and Labour Relations. ▪ Ministry ofEmployment and Labour Relations of Uzbekistan	Indirect Indirect Indirect Indirect Indirect Direct Direct Direct Indirect Direct Indirect Indirect	▪ Interested in developing of socio-economic situation in theregion; ▪ Interested in business development in the region; ▪ Approvals for and assistance in Project activities within each of the authorities' remit (land issues, road conditions, energy, investmentsupport, etc.) ▪ Potential assistance in interaction with other authorities and localpopulation/organizations ▪ Assistance in monitoring of appliance with local labor andsanitary regulations.

Local and regional Construction Companies	Direct	Construction Companies interested to participate in the bidding forproject implementation
Workforce	Direct	Project employees, contractors, and their workers engaged in the project construction activities.
International Lenders/ International Organizations: AIIB	Indirect	Lenders are interested in the successful implementation of the projectwhile applying environmental and social requirements.
Regional and Local CSOs/NGOs (**Women**'s **Committee, Association** of **Business Women** of **Uzbekistan, Center** for **Youth Initiatives and etc.**)	Indirect	Interested in monitoring the impact of the project, monitoring theapplication with E&S requirements.
Media	Indirect	This refers to news and information media which could influencepublic opinion.
Vulnerable/Disadvantage Groups or Persons		
Unemployed people in project area. Women headed families, families with many children (more than 5), Low-income families, disabled persons, elderly people with nobody to care etc.	Direct	Groups or Individuals who may be disproportionately impacted or further disadvantaged by the project(s) as compared with any other groups due to their vulnerable status, and that may require special engagement efforts to ensure their equal representation in the consultation and decision-making process associated with the project.

1.2 Stakeholder Mapping Analysis

506. Stakeholder Analysis is the process of identifying the individuals or groups that are likely to affector be affected by a proposed Project and sorting them according to their impact on the Project and the impact the Project will have on them. This information is then used to assess the way the interests of the stakeholders should be addressed in the Project plan, policy, program, or other action.

507. The purpose of a stakeholder mapping is to:

- Study the profile of the stakeholders identified and their roles for the Project;
- Understand each group's specific issues, concerns as well as expectations from the Projectthat each group retains;
- Gauge their influence on the Project or the impact of the Project on them;
- Understand their vulnerabilities; and
- Understand the most effective means to communicate with the different stakeholder groups.

508. The significance of a stakeholder group is categorized considering the magnitude of impact of theProject on the stakeholder or degree of influence (power, proximity) of a stakeholder group on the Project functioning. The significance of the stakeholder group importance for the Project and the requirement for engaging with them is identified as an interaction of the impact and influence. The matrix for significance is depicted in **Table 28.** and the description the stakeholder analysis and influence are depicted in **Table 29** below.

Table 28 Stakeholder Significance and Engagement Requirement

		Likelihood of Influence on/ by Stakeholder		
		Low	**Medium**	**High**
Magnitude of Influence/ Impact	**Negligible**	Negligible	Negligible	Negligible
	Small	Negligible	Minor	Moderate
	Medium	Minor	Moderate	Urgent
	Large	Moderate	Urgent	Urgent

Table 29 **Stakeholder Analysis & Influence**

Nature of Influence	**Implication**
High Influence	High Influence implies a high degree of influence of the stakeholder on the Projectin terms of participation and decision making or high priority to engage with the stakeholder.
Medium Influence	Medium Influence implies a moderate level of influence and participation of thestakeholder in the Project as well as a priority level to engage the stakeholder which is neither highly critical nor are insignificant in terms of influence.
Low Influence	Low Influence implies a low degree of influence of the stakeholder on the Projectin terms of participation and decision-making or low priority to engage that stakeholder.

509. The intermediary categories of low to medium or medium to high primarily imply that their influence and importance could vary in that range subject to context

specific conditions or also based on the responses of the Project towards the community.

510. The coverage of stakeholders includes any person, group, institution, or organization that is likelyto be impacted (directly or indirectly) or may have interest/influence over Project. Though this document has attempted to be inclusive of all categories of stakeholders across the entire Project cycle,it is difficult to identify all potential stakeholders and gauge their level of influence over the entire Project cycle. Therefore, the project owners will revise stakeholder's list and their profiles in a timely manner to ensure applicability for any given period of the Project cycle as shown in **Table 30.**

Table 30 Stakeholder Profiles and Influence Mapping

Stakeholder Group	Brief Profile of theStakeholder	Interest of the Stakeholders	Impact of the Project on theStakeholders	Influence of the stakeholder on the Project	Magnitude of Impact/ Influence	Stakeholder Significance
Local Communities	This stakeholder comprises communities residing in the vicinity of the Project area and impacted directly by Project activities	Information about the project site and its potential impacts; Access to quality road infrastructure; Employment opportunities during the Project Construction period; Minimum impacts to the community in case of noise, air and water pollution; and Mechanism for raising grievances or concerns.	The stakeholders can be affected by physical and/or economic displacement, structures impact because of Project activities. The Project will to improve connectivity between communities by integrating selected local roads into the international and state road networks, thereby providing better access to markets, schools, healthcare, and social services for local residents The Project may also lead to an increase in job opportunities and subsequently increase in incomes. Employment opportunities are openly displayed and accessible to local community members.	This stakeholder plays a critical role in the formation of public opinion towards the Project and allowing for the smooth functioning of the Project. The stakeholder group may potentially be engaged as local resources such as skilled/ semi-skilled jobs in the Project facilities.	Impact of Project on Stakeholder: **Large** Influence of Stakeholder on Project: **Medium**	**Urgent**

Stakeholder Group	Brief Profile of theStakeholder	Interest of the Stakeholders	Impact of the Project on theStakeholders	Influence of the stakeholder on the Project	Magnitude of Impact/ Influence	Stakeholder Significance
Makhalla Leaders	This stakeholder is an institution holding traditional power. It is headed by a chief/ chairman and play an important role in Uzbek community.	Having access to relevant information on the Project (e.g., grievances, emergency procedure andmanagement measures); Benefiting from social investment; Training of local population on skill enhancement, in case of opportunities.	The impacts of the Project on this stakeholder group will be in case of potential for social disruptions, between local inhabitants and the working population migrating into the area creates a potential for social disruption.;	This group thus could influence the perception of the community in regard to the Project and its activities.	Impact of Project on Stakeholder: **Medium** Influence of Stakeholder on Project: **Medium**	**Moderate**
Vulnerable/Disadvantage Groups or Persons	This stakeholder group refers to the vulnerable group such as Women headed families, families with many children (more than 5), Low-income families, disabled persons, elderly people with nobody to care, Unemployed people in project area etc.	Information about the project site and its potential impacts; Access to quality public services and other community development services; Employment opportunities; Information about project support components for vulnerable people (if any); Mechanism for raising grievances or concerns.	In view of the poor social and economic conditions of the Vulnerable people, the PIU may have to provide engagement avenues for the group; This stakeholder group can benefit from potential employment opportunities and/or project support components.	The influence of this stakeholder group on the Project is limited.	Impact of Project on Stakeholder: **Medium** Influence of Stakeholder on Project: **Medium**	**Moderate**

Stakeholder Group	Brief Profile of theStakeholder	Interest of the Stakeholders	Impact of the Project on theStakeholders	Influence of the stakeholder on the Project	Magnitude of Impact/ Influence	Stakeholder Significance
Workforce	This stakeholder comprises of Project employees, contractors, and their workers engaged in the project construction activities.	Opportunities for direct employment; Economic benefits such as payment of minimum wages; Training and induction programs; Receiving relevant information on the Project; Working in a safe environment, free of conditions that foster inequality. Mechanism for raising grievances or concerns	The Project provides employment opportunity to this group. The Project may pose health and safety concerns if proper safety measures are not adopted by the workers.	This stakeholder engagement is critical for the smooth implementation of the Project. This group has an important role in formation of public opinion. In case the labour requirements and health and safety measures are not complied with, there may be a risk of conflict and protest which may affect the image of the Project.	Impact of Project on Stakeholder: **Medium** Influence of Stakeholder on Project: **High**	**Urgent**
Local and regional Construction Companies	This stakeholder group comprised of the contractors to be involved in the Project such as those supplying materials and/or construction.	Economic benefits due to dynamism of regional and municipal economic activity; Receiving information on relevant business opportunities; Sharing of Emergency response and Compliance to E&S requirements; Response to grievance and emergencies raised by the suppliers and contractor; Increased of opportunities for indirect employment.	The Project provides a sustained business opportunity to this group in the area.	This stakeholder group is critical for the smooth functioning and timely implementation of the Project; This group may also play an important role in the formation of public opinion towards the Project. This group will be a stakeholder in the implementation of the benefit sharing plans formulated for the Project.	Impact of Project on Stakeholder: **Small** Influence of Stakeholder on Project: **Medium**	**Minor**

Stakeholder Group	Brief Profile of theStakeholder	Interest of the Stakeholders	Impact of the Project on theStakeholders	Influence of the stakeholder on the Project	Magnitude of Impact/ Influence	Stakeholder Significance
Lenders & Investors	This stakeholder group includes investors who may be evaluating investment opportunities into the Project.	E&S compliances; Providing a safe environment for all workers; Adherence to safety protocol; Regular monitoring and reporting.	The impact of the Project on this stakeholder group will primarily pertain to Project's performance.	This stakeholder group's influence on the Project will primarily pertain to the determination of the Project's financial feasibility. In addition to the national rules and regulations, the Project is required to comply with the internal standards of these financial institutions.	Impact of Project on Stakeholder: **Small** Influence of Stakeholder on Project: **High**	**Moderate**
Government and Regulatory Authorities	This stakeholder group comprised regulatory authorities at the district, state and national level that are responsible for various permits and licenses pertaining to the Project.	Receiving information on Projects (timeline, potential impacts, benefits) Promoting economic development Establishing clear channels of communication Compliance to national laws and requirements.	The impact of the Project on this stakeholder group will be negligible. However, it is expected that the project will abide with all applicable national guidelines, policies and laws.	This stakeholder group is high in priority as this group provides the permits and licenses essential for the functioning of the Project. This stakeholder group can result in Project shut down or stop-work for a few days and/ or penalties and fines being levied on the Project.	Impact of Project on Stakeholder: **Small** Influence of Stakeholder on Project: **High**	**Urgent**

Stakeholder Group	Brief Profile of theStakeholder	Interest of the Stakeholders	Impact of the Project on theStakeholders	Influence of the stakeholder on the Project	Magnitude of Impact/ Influence	Stakeholder Significance
Media	This stakeholder group is comprised of the regional and national press (both print and audio-visual). This stakeholder group can play an extremely important role in the generation of awareness and public opinion towards the Project	Receiving relevant information on the Project (timeline, potential impacts, benefits) to inform the population; Disseminating relevant and attractive information for their audience on Project development.	The impact of the Project on the stakeholder is likely to be extremely limited due to the nature of the Project activities.	The influence of the stakeholder group on the Project is likely to pertain to the opinion formation amongst the local, national and potentially international stakeholders towards the Project. Reporting on the Project's poor environmental and social performance.	Impact of Project on Stakeholder: **Small** Influence of Stakeholder on Project: **High**	**Moderate**
NGOs/CSOs operating in the area	This stakeholder group comprises of regional, national operating in the sphere of human rights, advocacy and community development.	Receiving information on Projects status; Potential adverse environmental and social impacts; Improvement of public service and economic development.	The impact of the Project on the stakeholder is likely to be limited due to the nature of the Project activities; Establishment of strategic social investment alliances.	The influence of the stakeholder group on the Project is likely to pertain to the opinion formation amongst the local, national and potentially international stakeholders towards the Project.	Impact of Project on Stakeholder: Small Influence of Stakeholder on Project: Medium	**Moderate**

1.3 Up-to-Date Stakeholder Engagement Activities

511. The project is currently in the preparation stage, and the detail design for the construction works has not yet been completed. This means that the Government and project preparation team are currently in the process of conducting meetings with project stakeholders to discuss and finalize the project's design. This is a crucial step in ensuring that all stakeholders are aligned and that the project can proceed smoothly once construction begins.

512. These meetings are essential for obtaining input and feedback from the local beneficiaries, as they will be directly impacted by the project. By involving these organizations in the design process, the Government and project preparation team can ensure that the final project design considers any specific requirements or considerations that may be unique to the local road infrastructure. This collaborative approach helps to minimize potential issues or conflicts that could arise during the construction phase.

513. After the completion and approval of the detail design, the Consultant proceeds to prepare a non- technical summary and organize public hearings. This non-technical summary will provide a clear and easily understandable overview of the project for the general public. It will outline the key aspects of the project, its potential impact, and the benefits it will bring to the community.

514. The public hearings will serve as an opportunity for the community to voice their opinions, concerns, and ask questions about the project. This process ensures that the public has a chance to participate in the decision-making process and provides a platform for open dialogue between the project team and the community. By actively engaging with the public, the project team can address any potential issues or misunderstandings, ultimately leading to a more informed and transparent decision-making process.

515. The Consultant prepared and submitted draft Stakeholder Engagement Plan (SEP) with proposed record templates. The centralized record will serve as a valuable resource for tracking the various interactions and engagements with stakeholders throughout the project's lifecycle, ensuring that all pertinent information is documented and easily accessible for reference and analysis. Regular updates to this database will be essential for maintaining an accurate and comprehensive record of stakeholder engagement efforts, enabling the project team to effectively track progress, identify trends, and make informed decisions based on the insights gathered from these engagements.

516. Identification of Project stakeholders was initiated at the stage of site visit and Inception report based on the results of the inspection of the site and adjacent areas, desktop studies and initial consultations with PIU and Bank specialists.

517. The Consultant has conducted series of meetings with identified stakeholders at the project area level. At the first stage in August 2024, during the first site visit the Consultants conducted meetings with the regional and district branches of RC, the road maintenance operators in the project area. During the meetings, the Consultants introduced the project goals and planned activities. The main concerns and questions raised by the authorities' included inquiries about the project timeline, detailed project design and coverage, proposed road sections.

518. During the ESMPF preparation on September 18-24, 2024 the Consultant conducted 11 public consultations and a focus group discussion in districts located

within project influence area. Two Social Safeguards Specialists and Gender Specialist 36 of the Consultant separately conducted public consultations and covered Makhallas where proposed project will be implemented. The public consultations in total hosted 120 participants, 56 men and 64 women.

519. Details of the meetings conducted are presented in the SEP submitted separately.

1.3.1 Stakeholder Engagement Program

520. The Stakeholder Engagement Programme is an important component of the SEP that is expected to help engage all the Project stakeholders. The SEP will also support the engagement of vulnerable groups that are facing hurdles to take part in the engagement directly for social and economic reasons. It is important to remember that the SEP implementation is a dynamic process, and some stakeholders and their interests might change over time; therefore, the SEP and the Programme will be updated accordingly. Stakeholder engagement within the project preparation phase is critical for supporting the project's risk management process, specifically the early identification and avoidance/management of potential impacts (negative and positive) and cost-effective project design.

521. Stakeholder engagement is an on-going process throughout the project's life cycle and there are three phases relevant to each selected project investments:

- Project Preparation Phase;
- Construction Phase; and,
- Operation Phase.

522. **Project Preparation Phase.** During the project preparation phase, the focus of engagement is primarily on gathering information and opinions from stakeholders. Engagement activities will therefore include interviews with stakeholder representatives (informal leaders) and key information organizations (communities, authorities, NGOs) using face-to-face meetings, workshops, and smaller focus group meetings.

523. Within the overarching project preparation objectives, the specific objectives of engagement during this phase are to:

- Introduce the project and ESMPF process to key stakeholders
- Identify potential impacts and issues that will be covered in subsequent phases
- Further identify stakeholders related to the Project
- Identify and gain access to relevant data for the baseline
- To gather stakeholder opinions on the proposed project and ensure that these opinions are fed into the assessment process
- To gather stakeholder feedback on the development of management and mitigation measures of potential impacts, particularly where stakeholders have a potential role to play in these measures.
- Provide feedback to the stakeholders on the ESMPF and associated management/mitigation measures (disclosure); and,
- Gather stakeholder input on the initial impact assessment and identified mitigation and enhancement measures (consultation).

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524. During this engagement phase, disclosure and consultation activities will be designed along the following general principles:

- Consultation events and opportunities must be widely and proactively publicized, especially among project affected parties, at least 2-3 weeks prior to any meeting;
- The non-technical summary must be accessible prior to any event to ensure that people are informed of the assessment content and conclusions in advance of the meeting;
- The location and timing of any meeting will be designed to maximize accessibility to project affected stakeholders;
- Information presented will be clear and non-technical, and will be presented in the local language understood by those in the communities;
- Facilitation will be provided to ensure that stakeholders are able to raise their concerns; and
- Issues raised are answered at the meeting or actively followed up.

525. Construction Phase. To ensure effective consultation with community members during construction of the Project, PIU will establish a project information center at the local districts Khokimiats and at the project site, aiming to disseminate project information to community members and receiving grievances, if any.

526. At the project site PIU and Contractors will install notice boards, these notice boards will be regularly updated with the Project information and used to inform community members about project activities, employment opportunities and impact management measures including the grievance mechanism. Noticeboards will also include the grievance/suggestion box, including responsible contact names for additional inquiries.

527. **Operation Phase.** After the completion of the construction works and handover process, local road authorities shall become the only responsible entities for SEP implementation, for continuous implementation of GM, and maintain relations with local stakeholders, updating them about project activities and mitigation measures (if any) carried out. This can be done through the publication of annual or quarterly reports, announcements on important events through local mass media (TV, radio, newspapers), updating noticeboards with indication of contacts of responsible staff for further clarifications.

528. Proposed strategy for information disclosure for different stakeholder groups and during all project phases is presented in Table 7.

529. The project will take special measures to ensure that disadvantaged and vulnerable groups have equal opportunity to access information, provide feedback, or submit grievances. Focus groups dedicated specifically to vulnerable groups may also be envisaged as appropriate. Where necessary (e.g., for minority or migrant population) information will be provided in the language that can be understood by them.

530. Convenient venues and small target meetings will be organized for vulnerable groups where they will feel comfortable asking questions and raise issues. Vehicles will be provided for transportation of residents of remote areas to nearest venues of meetings. If required, contacts with medical institutions in project areas will be established to obtain information about marginalized groups and most effective methods of interaction with them. All factors preventing vulnerable groups from participation (for example, language distinctions, unavailability of transport for participation in activities, accessibility of venues where activities take place, physical limitations, insufficient understanding of the consultation process) will be addressed by means of solution of all problematic issues by the consultants.

Table 31 Stakeholder Engagement Plan

Project Phase	**Consultation - Disclosure Materials**	**Engagement Method**	**Timeline/ Frequency**	**Stakeholder group**	**Percentage reached**	**Responsibilities**
Project PreparationPhase	Non-Technical Summary Potential impact on local communities andmitigation measures Grievance Mechanism	• Flyer or brochure with shortproject description. • Presentation and discussionsduring the public meetings. • Website publication • Announcements on local media (TV, newspaper, socialmedia. • Bulletin boards in districtcenters and in affected settlements.	At least 20 days before the finalization of proposed projectdesign. When draft version of the project design isready.	Local Communities in the Project area Local companies and organizations Makhalla Leaders Road Committee (RC) Avtoyulinvest '' Agency (AYA) Main Road Department of the Republic of Karakalpakstan and Khorezm Region Local Government Organizations AIIB Regional and Local CSOs/NGOs Media Vulnerable/Disadvantage Groups or Persons	Reach the maximum share of population in theproject area through localmedia; Most of the population ofaffected communities through distribution of information materials andposters on bulletin boards	Project PreparationTeam and AYA, and PIU

Construction Phase	Announcements about construction works and mitigation measures; Traffic management plan; Contractor's GRM	• Community meetings • Poster on community bulletin board • Telegram channels • Announcements on local TV	At least 3 days prior the event, Constant information in the channel Twice a day during 2days on local TV.	Local Communities in the Project area Local companies and organizations Makhalla Leaders Road Committee (RC) Avtoyulinvest '' Agency (AYA) Main Road Department of the Republic of Karakalpakstan and Khorezm Region Local Government Organizations AIIB Regional and Local CSOs/NGOs Media Vulnerable/Disadvantage Groups or Persons Local and regional Construction Companies Workforce	Announcement on local TV will reach 50% of population and poster onbulletin board, telegram channel reaches another percentage of thepopulation	Safeguards specialists of Contractors, action to be steered by PIU Safeguard and Social Development Specialist

Operation Phase	Information about operation activities, changes in tariffs, potential disruptions inthe services; GRM of Operator	Poster on Bulletin board at the local mahkallas Announcements on Local TV	At least 3 days before the event	Local Communities in the Project area Local companies and organizations Makhalla Leaders Road Committee (RC) Avtoyulinvest " Agency (AYA) Main Road Department of the Republic of Karakalpakstan and Khorezm Region Vulnerable/Disadvantage Groups or Persons	Announcement on local TV will reach 50% of population and poster onbulletin board reaches another percentage of thepopulation	Office Manager ofOperator

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLANNING FRAMEWORK

Institutional Arrangement

376. The State Road Committee of the Republic of Uzbekistan (Executive Agency) was established on the basis of Decree of the President of the Republic of Uzbekistan No. UP-4954 "On measures to further improve the road management system" dated February 14, 2017 and Decree of the President of the Republic of Uzbekistan No. PP-2776 "On the organization of activities of the State Committee of the Republic of Uzbekistan on Highways and the Republican Road Fund under the Cabinet Ministers of the Republic of Uzbekistan" dated February 14, 2017. On the basis of Decree of the President of the Republic of Uzbekistan No.UP-5647 "On measures to radically improve the public administration system in the field of transport" dated February 1, 2019, the State Road Committee of the Republic of Uzbekistan was renamed the Road Committee under the Ministry of Transport of the Republic of Uzbekistan and transferred to the Ministry of Transport of the Republic of Uzbekistan.

377. The Avtoylinvest Agency (Implementing Agency) is the executive body for the implementation of investment projects in the field of road management with the participation of international financial institutions and foreign government financial organizations. The main tasks and priorities of the agency's activities: identification of projects aimed at improving the road management system, including investment projects with the participation of foreign investments, loans from international financial institutions and foreign state financial organizations, participation in the development of their annual, short-term and long-term programs; cooperation with relevant ministries and departments in the development of the project.

378. In accordance with the decisions of the President of the Republic of Uzbekistan and the Cabinet of Ministers of the Republic of Uzbekistan, the Agency creates groups for the implementation of projects in the field of road management with the participation of international financial institutions, foreign government financial organizations;

379. The functions of the general customer for the design, construction, reconstruction and repair of public roads are assigned to the State Unitary Enterprise "Directorate for the Construction and Reconstruction of Public Roads", and rural roads, streets of cities, urban settlements and villages – Regional Roads Service under the territorial Main Road Departments of the Republic of Karakalpakstan and regions.

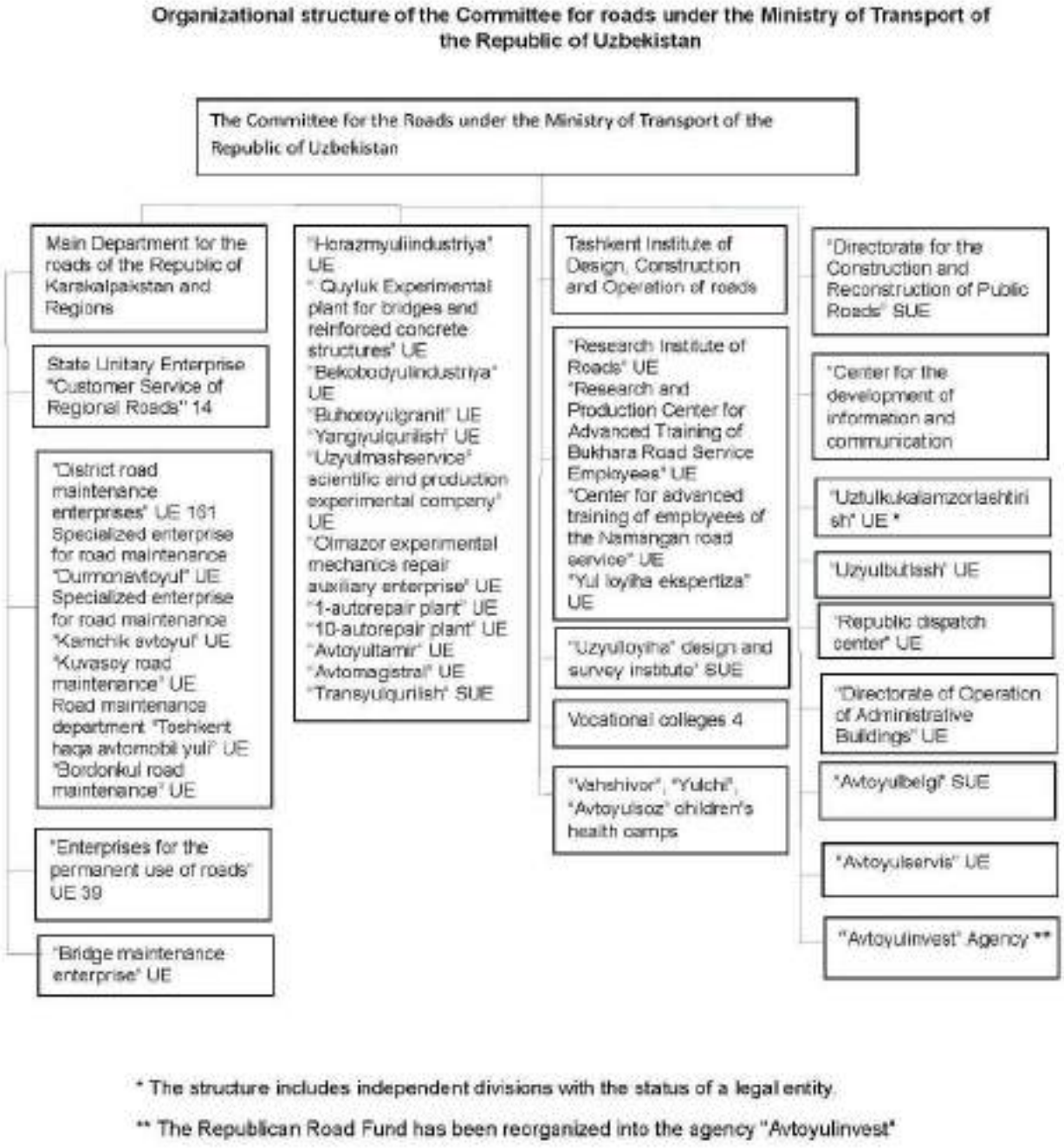

Figure 21 Organizational structure of Road Committee

531. Implementing Agency (IA) and PIU will be supported by CSC. A project organizational structure is provided in **Figure 21**.

The PIU will be responsible for implementation and monitoring of site-specific ESMPs to comply with AIIB safeguards requirements and environmental national regulations. Present PIU has Environmental and Social Specialist (ES). It is planned one sub PIU will be set up also in Karakalpakstan and Khorezm region. To ensure compliance with this ESMPF and AIIB safeguards requirements, the PIU will have one Gender and ES Specialist located in Tashkent. And Local staff for the sub-PIUs in both regions. Each regional sub-PIU will consist of: (i)) at least one ES Specialist/Officer, and (ii) one Safety Officer.

Additionally, the supervision consultant and contractor will each engage at least one ES Specialist and one Safety Specialist.

329. The Contractor (Design-built) will be responsible for preparation of site specific instruments (ESMPs, GAPs, RPs/LRPs). Supervision Consultant and PIU will review and AIIB will approve..Contractors will be responsible for implementing mitigation measures. Prior to commencing any physical works, SSESMPs will be developed by the Contractors underthe guidance of the CSC , and be endorsed by CSC before submission to PIU for approval. The SSEMP is the document that the Contractors shall prepare outlining how it intends to implement the ESMPand ensure that all of the mitigation and monitoring is completed according to the implementation arrangements specified in this ESMPF. SSESMPs will be needed for all sites/sub-project and it will include major environmental issues and most critical sites relating to sensitive receptors During construction, the Contractors will retain the expertise of a full-time Environmental and Social Officer (ESO) to implement and continually update the SSEMPs, and to report on the implementation of mitigation measures throughout the contract period.

330. The CSC is tasked with specific responsibility to assist PIU in ensuring safeguard complianceof civil works – with particular emphasis on the monitoring of implementation of ESMP through the Contractors SSESMP and related aspects of the project. CSC shall retain the use of E&S and H&S Specialist, both national (NES) and international (IES), to ensure that the Contractors are compliant with his environmental obligations. It is required that the IES provides a short training program to the PIU andPIUs safeguard person and Contractors ESO/Safety/OHS Officer prior to the start of construction to develop their knowledge and understanding of the environmental, social, health and safety aspects of the Project. The IES will also be responsible for developing a comprehensive proposal for establishment and operations of the Environmental awareness centers. Training EHS for contractors need to be conducted throughout project implementation, at every visit of the IES. TORs for IES and NES can be found in the CSCC contract.

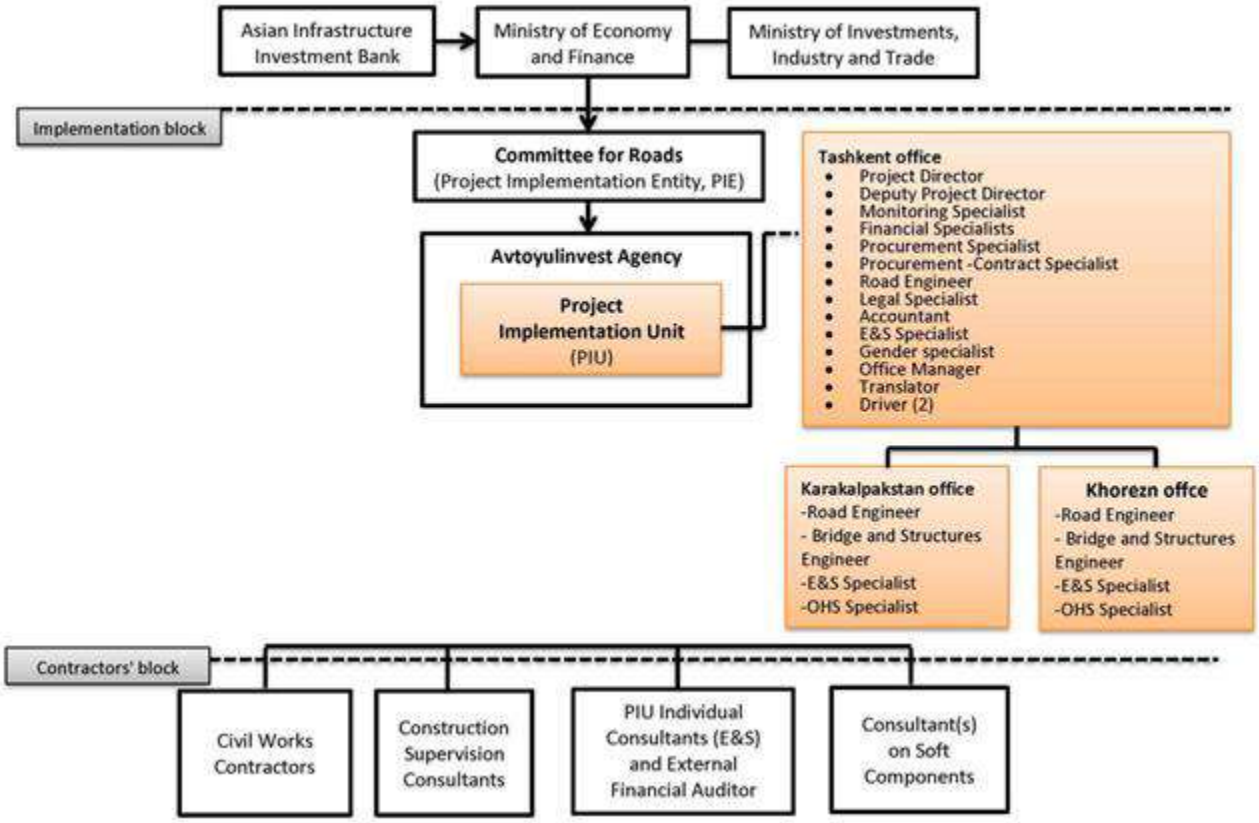

Figure 22 Institutional set up of safeguards performance within the project

380. In addition to the Contractor's full-time ESO and the CSCC 's part-time NES backed up with an IES, itis required that PIU designate a full-time safeguard position to manage and coordinate the contractors andCSCC in reporting to PIU IA and AIIB on safeguard performance of the project. The PIU's environmentaland social responsibilities include the following, but not limited to:

- Assist in the screening of new sub-projects on compliance with AIIB Environmental andSocial Exclusion List;
- Assist in development of national EIA for new sub-projects, as required by nationalregulations and to receive non-objections from MEEPCC.

381. PIU's ES will be in charge for:

- Ensure the bidding documents of CSC and Contractors include all tasks as described in theapproved ESMPs;
- Supervise the CSC and Contractors in ESMP implementation for overall compliance with ESFAIIB (2022) requirements and project environment-related legal covenants;
- Ensure all necessary government permits and license, including ecological expertise opinion, permission for cutting or replanting trees for all civil works are obtained;
- Approve SSESMPs which will be prepared by the Contractors and endorsed by the CSC With assistance of the CSC , prepare, submit to

the EA and AIIB, and disclose semi- annual environmental and social monitoring reports on AIIB website and in AYA website;

- Report in a timely manner to AIIB of any non-compliance or breaches with AIIB safeguard requirements and take corrective actions promptly. Update the local EIA and ESMPs in case of technical design changes or unanticipated impacts
- Establish a GRM after the project effectivity and act as the GRM secretary to make sure that the GRM is operational to effectively handle environmental and social concerns of project affected persons.

382. The Ministry of Ecology and Environment Protection and Climate Change of the RoK and Khorezm region through will be also involved in the process of project implementation and further operation. Karakalpakstan and Khorezm region branchs of MEEPCC will review national EIAs (ZVOS) if substantial changes in the project design or new sub- projects will be selected national EIAs will be updated and resubmitted to MEEPCC. The MEEPCC will approve it if the ZVOS complies with national requirements. Moreover, requirements indicated in Environmental Appraisal will be mandatory for implementation and it will be monitored by inspectors from district branches of MEEPCC.
383. All procedures related to trees catting and replanting (if needed) will be implemented under the supervision of MEEPCC biodiversity specialists.
384. Representatives of the Ministry will also participate into the hand- over process as member of State Acceptance Commission.

Screening Methodology

Environmental Screening

Conducting subprojects Environmental and Social Assessment requires the following steps:

385. **Step 1: Screening.** PIU will carry out screening of sub-projects in categories A, B or C. It is expected that all selected sub-projects will be Categories B. In general, a project will be classified as a Category A project if it: creates an impact affecting an ecologically sensitive area, especially if the project is located less than 1000 meters from any designated wildlife sanctuary, national park, other sanctuary, or area of international importance or cultural heritage and archaeological sites identified by UNESCO and/or the Government of RUz; and exists and already passes through any ecologically, culturally and archaeologically sensitive areas. If sub project is screened as Category A, it will be excluded from financing.

386. Sub-projects that do not relate to any of these conditions defined above are classified as B. The PIU Environmental and Social Specialist will also verify the suitability of the subproject for the AIIB Environmental and Social Exclusion List (Appendix 12.2) before deciding to include the subproject in the program.

387. After completion screening, PIU ES specialist will prepare screening report which will be submitted and reviewed by AIIB for no objection. The templates for screening checklist and screening reports are presented in Appendix 12.3.

388. PIU Environmental and social specialists defines category of the project and

required environmentaland social due diligence in accordance with ESF and national legislation.

389. The project category must be determined in accordance with both RCM No. 541 (2020) and AIIB ESF(2022).

Table 32 Environmental category of the projects in accordance national categorization

#	Type of facility	Category in accordance RCM#541 (2020)	Required environmenta Idocuments
1	Motorways, subways, railways, highways, bridges and freight terminals of national and international importance.	I	PEIS (IES), SEC
2	Roads and bridges of the Republic of Karakalpakstan, the city of Tashkent and regional significance.	II	PEIS (IES), SEC
3	Roads and bridges of regional and urban significance, with the exception of the city of Tashkent.	III	PEIS (IES)

390. In accordance with national environmental categorization, reconstruction of roads and bridges of urban significance will belongto category 3, since all project works will be at districts level.

391. Once the environmental assessment process confirms that a subproject proposal can be included in theproject, the PIU Environmental Safeguards Specialist will identify the necessary tools to conduct the ESA.The Category B projects are subject to have in place a site-specific ESMP.

392. **Step 2: Subprojects Environmental and Social Impact Assessment.** For subprojects that are identified under Category III (or Category B according AIIB classification), a national PEIS (and IES). For such projects, in order tocomply with AIIB standards, Contractors with support of CSC will prepare the site specific ESMP. As a rule, project designers, subcontract a specialized firm licensed to conduct EIA in accordance with the legislation of the RUz, and,as a rule, the final reports are passed through the MEEPCC.

393. **Step 3: Public Consultation.** Once the ESMP is prepared these documentsare subject to public consultation. During the public consultation process, ESMP documents will be distributed to all interested parties and local population, by posting them on the web sites and by submitting them to the local councils. Minutes of public meetings will be kept and will be included in the final ESMP. During the consultation session, the CSCContractor's environmental and social team in cooperation with the PIU ESS will present the ESMP (project, its location and implementation schedule, overview of the ESA process, and any conclusions on impacts, proposed mitigation measures and benefits). These data should be defined as preliminary or intermediate, indicatingthat input from participants can still be applied to project planning. Participants will be invited directly (notby order) to submit comments and corrections to what is presented. Adequate and convenient contact information will be provided for use by participants.

394. **Step 4: AIIB acceptance.** The ESMPs documents will be prior reviewed by

the AIIB. After thatsuch prior review will be requested only for B subprojects which would require ESMP.

395. **Step 5: Information Disclosure.** For all approved sub-projects, the PIU will ensure that printed copies of the final ESMP in the local language are available in a public place. The PIU will disclose the final documents on the website of the AYA for a minimum of 30 days before AIIB approval. Before the final approval of thesub-project, the AYA will also submit to the AIIB the English versions of the ESMP final documents for its own records.

396. **Step 6: Integration of ESMP requirements into project documents.** All sub-project bidding documents shall include a requirement for implementation and preperation of the ESMP/checklist, and this ESMPF willbe attached to the bidding documents and then to the construction contracts.

397. **Step 7:** Monitoring. PIU and CSC will carry out regular monitoring of sub-projects during construction and operation to ensure that ESMP/checklists are properly implemented. If PIU notices any problems in implementation, it will inform the relevant contractor and agree with him on corrective action to be taken. The PIU will present its findings to the AIIB in the project progress report twice a year or more frequently, and bring issues to the attention of the AIIB as necessary. The AIIB projectteam may visit also visit the sub-project sites as part of the project supervision, as appropriate and appropriate.

Table 33 Screening of categories for proposed types of sub-projects and suggested EA instrument

Project activity	Proposed Category		Remarks	Proposed AIIB instrument	Requirements of national legislation
	AIIB	National			
Construction/rehabilitation local roads and bridges in Karakalpakstan	B	III		ESMP RAP (if required)	PEIS
Construction/rehabilitation local roads and bridges in Khorezm Region	B	III		ESMP RAP (if required)	PEIS

398. In parallel, national EIA will need to be conducted for each new sub-project or new location.

Social Screening

Screening on social aspects is mainly relevant to the resettlement activities, Each sub-procejt will be screened and Social Due Diligiance Report will be prepared. The full description of screeningprocess, required actions and preparation of relevant documents is presented in RPF.

Generic ESMP

331. The primary objective of the Generic ESMP is to propose possible measures to mitigate adverse environmental and social impacts and enhance positive impacts resulting from the subprojects activities that are identified in Chapter 5. Besides, it also

addresses any unexpected or unforeseen environmental andsocial impacts that may arise during construction and operational phases of the subprojects.

332. The Generic ESMP clearly lays out:

a) the measures to be taken during design, pre-construction, construction and operation phases of a subproject to eliminate adverse environmental and social impacts, or reduce them to acceptable levels;

b) the actions needed to implement these measures; and
c) indicates parties responsible for implementation of mitigation measures.

333. According to the analysis in Chapter 4, most of the adverse impacts of subprojects could be minimizedor eliminated by adopting standard mitigation measures. This section describes the standard mitigation measures that could be applied to the subprojects. **Table 34** shows “general impacts” and suggested mitigation and enhancement measures. It also assigns responsibility for implementation of mitigation and enhancement measures. The subproject specific impacts need to be identified and a subproject ESMP will be prepared in line with the Generic ESMP.

334. Content of ESMP is provided in Appendix 12.4.

Table 34 Generic Mitigation measures plan

#	Project Components and Activities	Expected Environmental and Social Risks and Impacts	Mitigation Measures	Responsibility
1.	**Design/Pre-construction stage**			
	(i)Project design (road safety aspects) and procurement procedure, *(ii) the conduct of bidding and contracting processes with consideration of environmental aspects,* *(iii)institutional set up for environmental performance, and* *(iv)receiving all required permissions.*	• Road safety aspects is not properly considered in project design • Design practitioners and/or permitting or coordinating authority will not have enough expertise in using of current local regulations or not familiar with the international best practices • ESMP for each sub-project or for new sub-projects have not developed or do not consider the final design; • Requirements on ESMP implementation and preperation are not included in the bidding documents for Contractors; • Project require utility networks changing and utilities traverse underground, and implementation of construction works without obtaining approvals from agencies (gas supply, communication, etc.) prior to the commissioning of civil works may damage suchfacilities; • Permissions from relevant agencies are not obtained; • If there are any unanticipated impacts, the	• Capacity building of design practitioners and related government authorities • Involving to the CSC's team an International/Local Traffic safety specialist who will review detailed design from Road safety perspective. His/her TOR must be prepared taking into account the traffic safety mitigation measures stipulated in this report and must be agreed with AIIB. • Based on recommendations of CSC international and local road/traffic safety specialists provided to the Detailed Design on improving Road Safety, Design-Build Contractor is to agree technical solutions accordingly with the Government authorities and local stakeholders • CSC must initiate if necessary and immediately consider Contractor's claim variations on Road Safety improvements and give its determinations. • Consultations with local authorities (municipality, road owners, pre-school and high-school departments, road police), local community located along road sections (kindergarten, school staff, scholars, parents, business, hospitals, etc.) • Assessment of current situation on road infrastructure around schools using of methodology of the Star Ratings for Schools (SR4S) of the International Road Assessment Program (IRAP) • Analysis of crash black-spots • Coding assessment of existing roads and design solutions using IRAP methodologies for all road users such as car drivers, pedestrians (including children, elders and disabilities), bicyclists and motorcyclists. This assessment will cover all types of infrastructure (walkways,	AIIB and PIU AIIB and PIU CSC and Contractors CSC, PIU and AIIB PIU with assistance of CSC Piu with design company PIU with assistance of CSC PIU with assistance of CSC PIU with assistance of CSC

		ESMP will be updated to account for any additional or new environmental impacts and relevant correctiveactions.	signalized or unsignalized road crossings for pedestrians, bicycle lanes, etc.) of all road users • Ensure that project design include pedestrian access, speed limits, speed bumps, bus stops, etc. • Ensure that bidding documents include the latest version of ESMPF and Contractors' proposals include efficient allocation of staffing and budget for ESMP preperation and implementation; • Conduct screening of new sub-projects on compliancewith this ESMPF and AIIB ESF and develop necessary documents (ESMP). Approve non-objection from AIIB • Prior to commencement of civil works permissions to cut or replant trees need to be obtained from the MEEPCC as indicated in Decrees of President of RUz#46 (2021) and # 199 (2023); • Permission/license for using existing borrow pits or opening new ones (if any); • Permission on water use during construction phase; • Conduct examination of demolishing facilitates on presence of asbestos materials. In case of presence such materials develop ACMMP); Prior to commencing any physical works, SSEMPsincluding TSEMPs, will be developed by the Contractors before submission to PIU for approval. Theproposed list of TSEMPs is presented below: • Traffic Management Plan (TMP); • Wastes Management Plan; • Spoil Management Plan; • Spill Response Plan; • CCMP; • Occupational Health and Safety Plan (OHSMP); • Materials selection and further design are able to cope with low winter and high summer temperatures.	PIU with assistance of CSC Contractors Contractors Contractors CSC examine, Contractors develop Plan with assistanceof CSC , PIU approves the Plan CSC examine, Contractors develop Plan with assistanceof CSC , PIU approves the Plan Contractors develop, CSC reviews and PIU approves PIU with assistance of CSC PIU with assistance of CSC
2.	**Construction stage**			

	Construction/rehabilitation of local roads in Karakalpakstan and Khorezm Region *Construction/Reconstruction of bridges* *Replacement of utilities*	**Air Quality** • Pollutant emissions (SO_2, NO_x, CO and dust) will be generated due to earthworks, construction/demolishing activities, and the movement of vehicles. • Improper waste management, particularly the burning of construction and domestic wastes may lead to air pollution. • Asbestos dust generated during reconstruction works on replacement of utilities on the territory could also pose a serious health hazard to people living in houses near construction sites. Indirect air pollution impacts may affect the quality of crops (fruits, vegetables) and other plants growing around construction sites. • Parallel implementation of different sub-components in project districts may significantly increase amount of discharging air pollutants emissions.	✓ Apply watering of construction sites and roads inside settlements during dry season; ✓ Cover transported bulk materials; ✓ Control speed limitation for vehicles during movement inside of settlements - no more than 30 km/h; ✓ All vehicles and equipment will comply with technical requirements and will pass regular inspection as indicated in the national standards; ✓ Restrict demolition activities during the period of the high winds or under more stable conditions when winds could direct dust towards adjacent houses;	Contractors implement measures PIU and CSC monitor implementation

	Construction and reconstruction works; earth moving activity/digging trenches; movement of vehicles used for material transport; demolition works;	**Noise Pollution** • Noticeable noise level increases are anticipated during the demolition of existing road pavement • Construction works conducted populated areas with sensitive receptors (schools,kindergartens, and hospitals/polyclinics) may causeexcessive noise levels, above the allowed parameters. • Project workers will be exposed to noise from construction machinery as well as, potentially, hand-arm vibration from hand-held power tools, or whole-body vibrations from surfaces on which a workerstands or sits. • Parallel implementation of different sub-components inproject districts may significantly increase noise level.	✓ Establish limits on speed for vehicles inside of settlements (30 km/h); ✓ In the settlement areas, construction works generating noise will be undertaken during period from 8:00 in themorning and until 8:00 in the evening; ✓ Avoid construction works in front of schools during theperiod from 8:30 until 15:00 during the weekdays and Saturday. Apply additional mitigation measures (installation of acoustic screens, mufflers for machinery, etc.) in case of urgency or technical needs of such works; ✓ Prepare and implement OHSP; ✓ Schedule construction to minimize the multiple use of noisier equipment near sensitive receptors (houses, schools); ✓ Use of PPE by workers involved in demolishing and construction works in conditions of increased noise level is mandatory; ✓ Inform population about anticipated works at least oneweek before.	Contractors implement measures PIU and CSC monitor implementation

	Construction/ reconstruction works occurred close to waterways; crossing Waterways	**Surface Water ResourcesQuality** • Surface waters may becomepolluted due to the improper placement of excavated soil, poor management of construction camps, improper storage of construction materials, leakage of fuel and lubricates from construction machinery, and washing of vehicles and equipment without proper maintenance. • The pollution of water in waterways will lead to a deterioration of the quality of water, which will potentially impact on the health of people who may use the canals in downstream areas for recreation purposes or irrigation. • In waterways with a permanent water presence and used for fisheries, any polluted watercould cause ecosystem degradation and the pollution offishes which further could be consumed by people. • Parallel implementation of different sub-components inproject districts may significantly increase water resources pollution.	✓ Construction camp (if any) will have to be located at asafe distance from water courses (no closer than 100 meters); ✓ Ensure that refueling, oil replacement or repairing works of the machinery will be conducted in the specially equipped places. Prohibit conduct these works in the area within 50 m from water streams; ✓ Management and storage of fuel, waste oil, hazardous waste will be planned in accordance with EHS General Guidelines on Hazardous Materials Management. Thisincludes the use of appropriate secondary containment structures capable of containing the larger of 110 % ofthe largest tank or 25% of the combined tank volumes in areas with above-ground tanks with a total storage volume equal or greater than 1,000 liters; ✓ Labor camps and construction sites will be equipped with sanitary latrines that do not pollute surface waters.Domestic wastewater from labor camps and construction sites will be canalized into septic tanks which will be installed by the contractors. The septic tanks will be timely emptied by hired septic trucks andtransported to the closest WWTP; ✓ Keep copies of the transportation company's licenses and provide waste transfer manifests at its camp site for routine inspection by the engineer; ✓ No wastewater will be dumped into any ditches or streams; ✓ Construction wastewater arising on the site will becollected, removed from the site via a suitable and properly designed temporary drainage system and disposed of at a location and in a way that will cause neither pollution nor nuisance ✓ For the works implemented remotely from the construction camps, Contractor will use bio toilets. The Contractor will conclude the agreement with local agency responsible for the collection wastewater from the toilets and its disposal; ✓ Topsoil stripped material will not be stored where natural drainage will be disrupted;	Contractors implement measures PIU and CSC monitor implementation

			✓ Ensure presence on the construction site spoil collection kits.	

	Replacement of utilities	**Ground Water Quality** • The pollution of ground water may occur if protocols on replacement pumps are not followed. • The improper construction and management of labor camps (improper maintenance, refueling, and improper collection and disposal of domestic wastewater) may also lead to groundwater pollution. • The pollution of groundwater may also lead to the pollution ofwater in wells which are used bythe local population for drinkingor communal use, negatively impacting on their health.	✓ Avoid location of construction camps within territory of ground water intake or buffer zone (30m) along staying wells which are used for drinking purposes; ✓ Other measures as it is indicated for soil protection andwaste management	Contractors implement measures PIU and PMSC monitor implementation
	Pipe lying works (utilities changing) and reconstruction of roads	**Soil Quality** • Unauthorized excavations of gravel and sand and improper restoration works on used carriers could negatively impact on soil. • The maintenance of machineryand refueling of techniques in non-appropriate and not-equipped places could also leadto the pollution of soil. • The pollution of soil could leadto the pollution of groundwater • which are used by population for drinking or domestic use. • Unauthorized excavation of soil especially from agricultural lands may lead to losses in crops and the consequent	✓ The topsoil of about 30 cm depth will be removed and stored separately during excavation work, not higher than 2m with 45o edge, fenced at least with special tapes and after the construction works will be finished the same soil will be placed on the top, in unpaved areas; ✓ To minimize soil compaction, movement of all type of vehicles will be allowed only through identified accessroads; ✓ Contractors will be required to use only authorized carriers with getting all necessary permissions per respective national legislation; ✓ Contractor will prepare Spoil Management Plan as part of SSEMP and will ensure its properly implementation.	Contractors implement measures PIU and PMSC monitor implementation

		income of land users operating in the project area.		
	Construction/ reconstruction of local roads *Construction/Reconstruction of bridges* *Replacement of utilities*	**Waste Management** *(a) Hazardous waste* - engine, hydraulic and transmission oils, oil filters and absorbents • Improper handling and disposal of hazardous materials, may lead to the pollution of soil, ground and surface water. Along with this, such materials are hazardous to human health. • There is also a possibility of the presence of asbestos materials in old pipes. *(b) Non-hazardous waste* - MSWs (rubbish, plastic or glass bottles, glasses, waste food, etc.); construction wastes (used welding rods, packing materials, and other woods); scrap materials (old, rehabilitated iron pipes) • Improper wastes management may cause the spread of infectious diseases, and the emergence of insects and parasites in construction camp sites. In addition, it may lead to conflicts with the local population. • Improper waste management, especially	*Hazardous wastes* ✓ A Waste Management Plan will be developed by Contractor, endorsed by CSC and approved by PIU for the construction sites with demolishing works. The Plan will include information about type of generating wastes, amount, procedure of their collection and disposal. The plan also will include information about responsible person, training, action plan for emergency; ✓ Develop and implement spill response plan; ✓ Refueling vehicles and replacement oils also will be conducted in special designated and properly equipped places. Emergency facilities will be at the place for elimination of accident of oil spills; ✓ Used oil from vehicles and machinery will be collected into containers placed at the concreted sites and disposed to national oil company designated for accepting and handling of used oils; ✓ Used batteries will be collected separately and transferred to the local branches "Cvetmet"[56] for further disposal. *Asbestos containing materials waste* In case of presence of asbestos materials, the Contractor will develop ACMMP that includes identification of hazards, the use of proper safety gear and disposal methods. (Sample ACMMP is provided in **Annex 12.1 .**). Any activities involving asbestos materials will be prohibited until the ACMMP is approved by PMSC and the PIU; ✓ Conduct all works on demolishing in accordance with approved ACMMP; ✓ Conduct awareness program on safety during the construction work. *Non-hazardous wastes* ✓ Conclude contract with waste disposal organization for the timely transportation and	Contractors implement measures PIU and PMSC monitor implementation

		domestic wastes, may lead to the pollution of groundwater and spreading of diseases among the population. Improper and non-timely disposal of wastes from construction sites and adjusted areas may lead to a situation where the local population dispose of their wastes in the same places.	disposal of non-recyclable wastes, prior to the commencement of any civil works; ✓ Put proper waste bins at a related areas of constructionsites and workers camps; ✓ Segregation of wastes on recyclable and non-recyclablewastes; ✓ Selling recyclable wastes to relevant organizations (paper, scraps, accumulators) and timely disposal of non-recyclable wastes to the municipal landfill. ✓ Providing bio toilets for workers at the construction sites and timely disposal of waste waters to the closestWWTP; ✓ Waste disposal will be done in accordance with agreement concluded between Contractor and waste disposal organization in timely manner (no more than 3days) only on official landfills; ✓ Burning of waste on any construction site is forbidden.	
	Project works *along canals and canal crossings*	**Biological Resources** • Cutting trees and bushes along existing roads and canals. • The implementation of civil works along canals and canal crossings, and the location of campsites close to canals, may impact on the aqua fauna of thecanals. • Construction activities near or inside reserve areas may also negatively impact on the biodiversity of reserve areas. The nearest natural protection zone to the project sites is the Low-Amudarya state Biosphere Reserve (LABR). • Lack of proper monitoring of vegetation may lead to the unnecessary loses of trees and vegetation	✓ During the Detailed Engineering Design, select methods of works in a way which allows to minimize cutting of trees and bushes; ✓ Prior to starting civil works, all trees which will be cut will be marked to avoid unnecessary cutting trees; ✓ Conduct joint revision of the project sites with representatives of inspectors from relevant district branches of MEEPCC to identify number of cutting bushes and trees if any and to receive permission from MEEPCC and city/district Khokimiyats (for trees cut inside and outside city) on cutting trees as it is indicated in Decrees of President of RUz #46 (2021) and # 199(2023); ✓ Do not use chemical and burning for removingvegetation.	Contractors implement measures PIU and CSC monitor implementation

	Construction/ reconstruction of local roads	**Socio-economic benefits and environment disturbance** • Creation of new jobs for local population. • The cutting of trees may also lead to a loss of income, especially for trees of commercial value. • Temporary access to some commercial facilities (shops, service centers) may be limited during construction works, causing decreasing of population income. • Civil works may also create risks related to the safety of thepopulation. • Increasing traffic intensity increases the nuisance for the population and the potential of road accidents.	✓ Construction during agricultural off- season will minimize the impact (loss of agricultural income). Major crops in the project area that could be affected are sunflower, rice, and vegetables which growing seasonally; ✓ If cutting trees is unavoidable, to compensate losses asindicated in the RPF for this project and in cost for trees. ✓ Hire local population with suitable qualifications for works to the extent possible; ✓ Prepare a work plan of construction works in a way allowing to minimize impact on economical income ofcommercial facilities. If works in front of commercial facilities will be conducted for longer than 3 days, install temporary facilities; ✓ Inform population in advance about planning works.	Contractors implement measures PIU and CSC monitor implementation
	Construction/ reconstruction of local roads	**Social Conflict and Labor Influx of Workers** • The influx of labor can lead to conflicts between newcomers and local residents. • An increase in the incidence of socially-related diseases is also possible due to the influx of labor. • The construction work and camp operation will require supplies such as water, fuel, and camp supplies. Obtaining these supplies from the local sources can exert additional pressure on these sources which may already be over-exploited and therefore adversely	✓ Local norms and customs will be respected ✓ Camp crew will avoid entering the settlements ✓ Liaison with the community will be maintained. ✓ The World Bank Guidance Note10 will be used to address potential impacts caused by temporary project induced labor influx; ✓ The contractor will prepare and implement a public health and safety management plan ✓ Consultations with community and reviews of measures on mitigation of consequences for public health and safety ✓ Implementation of GRM ✓ The contractor will prepare and implement a Code of Conduct for all site personnel, in consultation and coordination with the local community; ✓ All site personnel will be provided orientation and training on Code of Conduct. Awareness raising materials such as posters and signage will be used as appropriate; ✓ All site personnel will be provided awareness and training to prevent communicable diseases,	Contractors implement measures PIU and CSC monitor implementation

		affect the local communities.	sexually transmitted infections, Human immunodeficiency virus (HIV) infections / Acquired Immune Deficiency Syndrome (AIDS); ✓ Privacy of women will be respected; routes and places used by them will be avoided as far as possible; ✓ Contractors as a part of SSEMP will prepare and implement Work camp management plan. ✓ As described earlier, construction camps will be located at least 500 m away from the communities. Entry of the site personnel in the local communities will be minimized to the extent possible/appropriate. ✓ The contractor will prepare and implement a plan to obtain key supplies such as water and fuel, in consultation and coordination with the local community; ✓ The plan will ensure that there is no significant impact on the local community and local resources; ✓ Liaison with the community will be maintained; ✓ The GRM described earlier will also address community grievances related to usage of local resources.	
	Construction/ reconstruction of local roads	**Stakeholder Engagement and Grievance Mechanism** • Lack of project information, to understand its potential impacts, to raise issues and concerns, and ask questions • Complaints and conflicts related to project activities • Lack of information regarding stakeholders concerns and feedback	✓ updated constantly Stakeholder Engagement Plan developed and will ✓ Publc disclosure of project documentation (ESMP, Non-technical summary, RAP) ✓ Development and Implementation of GRM and consultations and reviews of mitigation measures for public health and safety ✓ conducting consultations with local communities for familiarization with the project schedule,scope of works providing information about the GRM of the project before construction works starts;	Contractors implement measures PIU and CSC monitor implementation
	Construction/ reconstruction of local roads	**Land Use (Temporary and permanent) and Livehood** • Project activities can lead to permanent and temporary land acquisition • Project activities can lead to the impact on the	✓ The places for sidewalks and bus stops should be selected with consideration of two main conditions: (i) to minimize impacts on agricultural lands and crops, and (ii) to ensure compliance with national standards on buffer zones for various communications and facilities ✓ If during the detailed design stage, any facilities	Contractors implement measures PIU and CSC monitor implementation

		community structures and livehood • Access to some commercial facilities (shops, service centers) may be limited during reconstruction works, causing decreasing of population income. • The cutting of trees may also lead to a loss of income, especially for trees of commercial value. • The quality of crops (fruits, vegetables) and other plants growing around construction sites may also be affected by indirect air pollution impacts	will require the land acquisition, due diligence of social aspects including land acquisition and resettlement aspects will be implemented in accordance with the Project RPF. ✓ If impact on land and assets will be confirmed RAP will be prepared and implemented ✓ No civil works will be initiated unless compensation for land and assets and reconstruction and resettlement assistance (if needed) is provided in full to all eligible PAPs ✓ Each type impact and loss to be compensated to Aps ✓ The places for sidewalks and bus stops should be selected with consideration of two main conditions: (i) to minimize impacts on agricultural lands and crops, and (ii) to ensure compliance with national standards on buffer zones for various communications and facilities. ✓ If cutting trees is unavoidable, to compensate losses asindicated in the RPF for this project and in cost for trees.	
	Construction/ reconstruction of local roads	**Forced and child labor Issues** • Child or forced labor can be engaged by the project or its contractors.	✓ Code of conduct for workers will be enforced. ✓ Monitoring will focus on the incidence of child labor or forced labor in the construction sites. ✓ No child labor or forced labor will be engaged by the project or its contractors. ✓ Implementation of the principles of equal working conditions in the Personnel Policy, excluding discrimination, child and forced labor, violation of staff rights requirements for contractors adhere to the personnel policy of the project through the provisions of the contract ✓ Develop a Code of Conduct ✓ The Contractor and familiarize all employees and contractors with it ✓ Contracts with suppliers and contractors must contain provisions on child and forced labor and determine the measures of influence for their violation create a grievance mechanism accessible to project personnel, including employees working under contracts and subcontractors, as well as supply chain workers create an identity system identification for all employees of the project and keep up-to-date	Contractors implement measures PIU and CSC monitor implementation

			(daily) records of persons working at the project facilities; ✓ Appoint labor and social affairs officer who will be responsible for monitoring the activities of contractors and their subcontractors (at the stage of construction) in relation to personnel management policy ✓ Report to local authorities and relevant authorities the cases of child and forced labor or any suspicion of them	
	Construction/ reconstruction of local roads	**Gender Issues- GBV and SE/SHA** • Labor migration and temporary settlement of laborers in the project brings along GBV risks • The temporary closure of streets and roads will affect women's mobility and their access to social facilities (shops, pharmacies, kindergartens and schools). • Also, the accumulation of male workers can cause concern among girls and women when moving early in the morning and in the evening, as well as in deserted places.	✓ The World Bank Guidance Note on gender-based violence (GBV) will be used to address potential impacts caused by temporary project induced labor influx; ✓ All workers will be required to read and sign a Worker Code of Conduct which will be explained verbally. The code of conduct prohibits the following and which is subject to disciplinary action: (i) harassment, gender-based violence and abuse of any kind will not be tolerated; (ii) discrimination based on personal characteristics is prohibited to include but not limited to gender, race, nationality, ethnic, social and indigenous origin, religion or belief, disability, age, or sexual orientation. ✓ The worker Code of Comduct will prohibit gender-based violence and harassment and will outline that a suitably trained male and female person is designated to process grievances in which male / female workers might feel uncomfortable discussing with a person of the opposite sex. ✓ The grievance mechanism also includes a procedure to deal with GBVH grievances. ✓ Training on worker code of conduct as part of induction training to all workers ✓ Training on GBVH code of conduct as part of induction training to all workers ✓ Specific engagement measures (such as focus group discussions on gender issues) will be undertaken with women groups including local women representatives, women Community Based Organizations	Contractors implement measures PIU and CSC monitor implementation

			(CBOs) and other to ensure inclusiveness in representation of views. ✓ The needs assessment, development initiatives and interventions will be identified and implemented in consultation and collaboration with female stakeholders (such as women CBOs). ✓ All subcontractors and suppliers will be required to submit company policies on at least equal opportunities and GBVH.	
	Construction/ reconstruction of local roads	**Local Economy** • Possible need for additional housing, catering, and other types of services. • Personnel with different qualifications will be required for construction works	✓ Contractors will be contractually bound to maximize employing the locals as appropriate ✓ The contractors will be required to formulate an employment policy to ensure equitable availability of employment opportunities to all communities within the project area particularly the project affected persons (PAPs) ✓ Providing reliable information about the project activities and needs in a timely and complete manner to all Stakeholders ✓ GRM implementations	Contractors implement measures PIU and CSC monitor implementation
	Construction/ reconsctruction of local roads	**Disturbance on public utilities** • Construction activities particularly in the urban areas can potentially damage the public utilities such as electricity wires, water pipelines, and drainage structures.	✓ Before the start of construction activities, all public utilities requiring relocation will be identified. ✓ Concerned departments/authorities will be contacted for the relocation of these utilities ✓ It will be ensured that there is a minimum disruption of services such as electricity and water. ✓ Any infrastructure damaged by the construction activities will be repaired. ✓ GRM will capture any related complaints. ✓	Contractors implement measures PIU and CSC monitor implementation
	Construction/ reconsctruction of local roads	**Traffic and Transportation** • The construction activities can potentially block local roads and routes and also cause traffic congestion. • Increasing traffic intensity, including increases in heavy machinery causing a nuisance for the	✓ The contractor will prepare and implement a traffic management plan, in consultation and coordination with the local community; ✓ The community will be informed about the nature of construction activities and possibility of any blocked route; alternate routes will be identified with the help of local/affected community. Duration of such blockage will be minimized to the extent possible;	Contractors implement measures PIU and CSC monitor implementation

		population, increasing traffic will also increase the potential of road accidents. • The construction activities including establishing and using access roads may also damage the local infrastructure such as existing roads/tracks, tube-wells, water courses, and drainage channels.	✓ Construction works on the selected sections will be planned and implemented in a manner to minimize traffic disruption. All road safety measures including road signage, warning lights, lane dividers, and safety railings will be installed. ✓ Liaison and coordination will be maintained with relevant authorities such as khokimiyats, makhallas, RoK and Khorezm region Road Safety Department. ✓ Liaison with the community will be maintained. ✓ The GRM described earlier will also address community grievances related to any blockage. ✓ The contractor will prepare and implement an Occupational Health and Safety (OHS) Plan that will also cover communities' health and safety aspects; ✓ Road signage will be fixed at appropriate locations to reduce safety hazard associated with project-related vehicular traffic. ✓ The community will be informed about the nature of construction activities and the associated health and safety risks; awareness raising of the communities will be carried out for this purpose with the help of training sessions, posters, signage, and other similar means; ✓ The construction sites will be fenced as appropriate to minimize entry of the local communities particularly children in the work areas; ✓ Construction planning will be carried out to avoid any damage of local infrastructure; ✓ Any infrastructure damaged by the construction activities will be repaired.	

	Construction/ reconsctruction of local roads	**Occupational and Community Health and Safety Issues** *(a) Community Health and Safety* • Inadequate lighting and fencing of construction sites inside of settlement areas can be dangerous for pedestrians and vehicles, especially during the nighttime. • Increasing traffic due to truck and other vehicle movements to construction sites, and the temporary closing of roads inside settlements may also cause inconveniences for the local population. • Temporary blockages of household vehicular access due to project works. • The untimely and inefficient disposal of solid waste and improper sanitary conditions generated by construction workers at construction sites may cause pollution of the surrounding environment and affect the health of local people. • Some social problems may occur due to the irresponsible behavior of the outside work force such as gambling, alcoholism and disrespect to local people and their culture. • Cultural interference workers with local communities may cause HIV and sexually	*For community* ✓ Contractor will inform population about anticipated works in the settlement in advance. Prior to starting construction works, Contractors will share work plan with indications timeline and places. ✓ Contractors will be required to develop a Traffic Management Plan (TMP) as part of the SSEMPs with clear indication routes of vehicles' movements, placement special signs, pedestrian crossings, especially near schools and speeding allowance inside of the settlements and schedule transportation activities by avoiding peak traffic periods. Agreement on the TMP will be obtained from Traffic Police. The TMP will be disclosed to local community prior to commencement of construction works on respective sites; ✓ Clear signs will be placed at construction sites in view of the public, warning people of potential dangers such as moving vehicles, hazardous materials, excavations etc. and raising awareness on safety issues; ✓ Install temporary bridges and effectively organize works, which will allow avoid unreasonable delaying of construction works; ✓ All construction sites (especially inside settlements) must be properly lightened and fenced; ✓ After completion of construction works, all roads will be rehabilitated at least up to condition of pre- construction stage; ✓ Carry out regular awareness campaigns among work staff, including specific hazards associated with the spread of HIV/AIDS. ✓ Contractor will develop a CCMP in reference to Workers' Accommodation: Processes and Standards57as part of SSEMP and implement; ✓ After completion of the main construction, Contractor will provide full reinstatement of the construction and camp sites by bringing them to its primary condition; ✓ Remove all rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; ✓ All hardened surfaces within the construction	Contractors implement measures PIU and CSC monitor implementation

		communicable diseases spreading in case of law awareness about these diseases among workers and community. • Movement of heavy tracks maydestroy or deteriorate conditions of roads inside settlements. *(a) Occupational Health and Safety* • Violations of OHS regulations can result in personal injury or accidents. • The lack of PPE and overall OHS implementation in the Contractors budgets may lead toincreasing risks of improper implementation of waste collection and disposal procedures, poor construction camp operations, and reduced living facilities for workers.	camp area will be ripped, all imported materials removed; and ✓ CSC will conduct post-construction audit during defect liability period to make sure that construction sites and camps are properly cleaned and restored to pre-project conditions before acceptance of works; *Occupation Health and Safety* ✓ Contractor will comply with requirements of Labor Code of Uzbekistan (2023) and standards on work andhealth safety;58 ✓ Contractors will develop OHSP. CSC will review andendorse and the PIU will approve the plans; ✓ Contractors will ensure proper implementation of the above plans;	
		Cultural heritage • The vegetation clearing and earthmoving activities during construction works may affect the archaeological heritage in the project areas	✓ In case of finding an object that can be identified as anartifact it is necessary to implement the following actions: ✓ Excavation and other works will be suspended immediately; ✓ Area with possible heritage will be fenced with fencingtape; ✓ A designated focal point from a local administration (khokimiyat) will be informed and invited to assess potential heritage and undertaken necessary actions; ✓ Civil works at the finding place will be recommenced after obtaining permission from the focal point.	
3.	**Operation stage**			

	Maintenance of the local roads(Pavement maintenance)	**Air Quality** • Impacts on air quality and noise levels could be caused by reconsctruction works which could be required during the maintenance of damaged road pavement.	✓ Immediately replacing defective equipment and removing it from the work site; ✓ No truck movements in inhabited areas between 22:00 and 6:00. ✓ The equipment and vehicles used during the construction process will comply with the national legislation as well as WBG EHS Guidelines on exhaust emissions; ✓ Road service companies will implement dust prevention measures such as watering of roads near the residential areas; ✓ Measures will be taken to protect the workers from excessive dust (i.e., usage of personal protective equipment); ✓ A GRM (discussed later in the document) will be put in place to receive complaints from public on various aspects of environmental issues, including air pollution.	Karakalpak and Khorezm region Road service companies
	Maintenance of the local roads(Pavement maintenance)	**Surface Water ResourcesQuality** • Impacts on water resources could be caused by reconsctruction works which could be required during the maintenance of damaged road pavement near the canals.	✓ Contractor will be required to take appropriate measures to avoid and contain any spillage and pollution of the soil; ✓ Contractor will confine the contaminants immediately after such accidental spillage;	Karakalpak and Khorezm region Road service companies
		• Deterioration of water quality in water bodies creates great risks for the population using these water bodies for recreational purposes. reagents residual may pollutesurface and ground water.		

	Road Operation	**Waste Management** • The operation and maintenance (O&M) activities at roads will generate wastes such as oily run-off from the road surface, spilled oil and other lubricants, broken vehicle parts such as pieces of tires, asphalt/concrete scrapping, road kills, and other similar wastes. Some of these are hazardous wastes.	✓ A Waste Management Plan will be prepared a as part of the standard operating procedures. ✓ The non-hazardous waste will be disposed through the city or district services hazardous wastes will be disposed by agreement with local organizations for the disposal of solid and hazardous wastes.	Karakalpak and Khorezm region Road service companies
	Road Operation	**Noise and vibration** • With the increase in the traffic volume and vehicular speed, noise and vibration will increase.	✓ If, as a result of baseline monitoring of noise and vibration, the values exceed the established norms, which implies an even greater noise impact after reconstruction due to increased traffic, it is recommended to install double noise-insulating window glasses on sensitive objects (schools, kindergartens, hospitals, etc.) ✓ Improvement of the soundproof qualities of buildings, or the development of noise-proof shielding structures, etc. ✓ Noise and vibration protection measures also include, first of all, measures to reduce noise and vibration levels by reducing the intensity and noisiness of traffic flows by reducing speed limits, limiting heavy vehicles entry by entering project roads in the day time only from 8-00 am to 8-00 pm , improving road maintenance, using less noisy types of street coverings; ensuring rational speed on highways; ensuring, and sometimes excluding, automobile traffic, especially freight, in the central areas of the city and on residential streets. buildings (construction of pedestrian zones, withdrawal of transit vehicles from the bypass road, establishment of one-way traffic, restriction of night traffic, etc.)	Karakalpak and Khorezm region Road service companies

			✓ Since vibrations are transmitted from the roadway along the ground to the frame of buildings and housing, to reduce the vibration level, provide a moat along the foundation and fill it with loose material (crushed stone, gravel).	
	Maintenance of the local roads(Pavement maintenance)	**Occupational and Community Health and Safety Issues** *(a) Community Health and Safety* • With the increase in the traffic volume and vehicular speed, risk of traffic accidents will also increase. The project road pass through many settlements also and also some sensitive receptors. At such locations, the increased traffic volume plus additional and severe risks to pedestrian and other road users. *(b) Operational Health and Safety* • Violations of OHS regulations can result in personal injury or accidents	✓ Use of appropriate personal protective equipment (PPE) will be mandatory. No worker will be allowed on the site without the required PPE (such as hard hat, safety shoes). ✓ Firefighting equipment will be made available as required at appropriate places. ✓ First aid facilities will be made available at the offices. ✓ Location and telephone numbers of the nearest hospital will be displayed at appropriate places. ✓ Implement highway safety standards specific for project ncluding traffic signage, warning signs, traffic lights, reflectors, and pedestrian crossings (overhead or underground where appropriate). ✓ Speed limit signs as well as speed bumps will be placed at regular intervals and at any social objects (schools, kindergartens, hospital and etc.) within the Project site. Signs will be cleaned and maintained to ensure visibility. ✓ Traffic safety shoudl enhanced with road safety features such as properly designed pedestrian crossings, street lighting, speed breakers, speed limits, especially near schools, hospitals, and populated areas. Noise barriers and buffers will be installed (if required) to protect nearby communities from increased noise and vibration from vehicular traffic. ✓ Emergency services (ambulance, rescue vehicles) will also need to bearranged. ✓ Liaison with the community will needto be maintained in addition to raisingtheir awareness regarding safety risksassociated with vehicular traffic.	Karakalpak and Khorezm region Road service companies
		Climate Change • High temperatures can cause softening asphalt	✓ Using high-grade heat/water resistant asphalt to avoid excessive softening and cracking (in	Karakalpak and Khorezm region Road service

		concrete pavement resulting in rutting and shoving. If high temperatures accompanied by drought, asphalt concrete pavement can crack becoming more vulnerable to raining water. • Heavy rain and flooding can erode paved road surface. Rain water can leak in under the pavement and damage the subgrade. Droughts can promote pavement cracking • Increasing number of freeze/thaw cycles leading to deterioration of road pavement • Changes in freeze/thaw (Water seeps to the little cracks caused by regular wear and tear processes, and freezes resulting in increasing pressure underneath the road pavement surface and rising up small bubbles. When ice melting the bubbles turn into potholes under pressure of the moving vehicles)	order to reduce sensitivity to the expected rising temperatures); ✓ Improved bridge design to reduce the thermal expansion of bridge expansion joints and paved surfaces; ✓ Development of the green protective belts along the roads to diminish the road heating (by shading and evaporation); ✓ Installation of stops, equipment of stops with protection from sun rays; ✓ Installation of information signs and boards with warning about high temperatures. ✓ Designing and constructing a system of drainage ditches and culverts designed with a reserve for expected heavy rainfalls and flooding; ✓ Designing and constructing bridge structures, a system of culverts and defenses with a reserve for expected flooding, ✓ restoration of natural areas around bridges to increase water accumulation and storage; ✓ Installation of stops with protection from rainfall, in places inaccessible to floods; ✓ installation of information signs and boards with warning about rainfalls and flooding. ✓ Using high-grade heat/water resistant asphalt to avoid excessive softening and cracking (reduce sensitivity to expected rising freeze/thaw cycles); ✓ installation of information signs and boards with warning about ice-covering.	companies

Monitoring Framework

Environmental and Social Monitoring

329. In order to ensure the implementation of the environmental and social measures specified in the ESMP, themonitoring will be carried out as follows:

- ***Baseline noise, vibrarition and water quality monitoring -*** *during the detailed design period, before the reconstruction works starts the Contractor will conduct baseline studies of the surface water quality in locations where new bridges will be built, noise and vibration levels in sensitive areas (near schools, kindergartens, and hospitals) where reconstruction work is planned. The monitoring points will be determined after the detailed design is developed and will be approved bu E&S PIU specialist. Noise and vibration level should be monitored according the IFC guidelines at daytime (7-00 -22-00)and night time (22-00- 7-00) in the weekday and weekend. Water quality sould be monitored at parametrs: Oil products, dry residual, BOD, COD, pH, ammonia, SO4. According to the monitoring results mitigation measures to avoid or minimize noise and vibration impacts, surface water pollution should be incorporated into the site-specific ESMPs either prepared by the Contractor.*

- ***Visual monitoring*** *- during the construction stage of the sub-projects* the environmental specialists and social specialists (ES and SS) of the PIU together with CSC national environmental and social specialists will continually monitor the performance of ESMP by Contractors. This will be achieved through monthly inspections of construction / reconstruction projects by specialists throughout the whole construction period. The Environmental and Social Specialists of the PIU has the right to suspendwork or payments if the Contractors breach any obligation on ESMP implementation. For monitoring, it is recommended to use special checklists that can be compiled on the basis of ESMP with the attachment of photos from the monitoring site.

- ***Instrumental monitoring of environmental quality***, such as air and water quality. Taking intoconsideration the types of activities that will be implemented within the framework of this Project, instrumental monitoring will be carried out. Instrumental measurements of air or water quality will be carried out by the CSC through the hiring of a certified laboratory. In case of national standards exceeding, the sub-borrower will be obliged to take additional measures to reduce the detected exceedances to meet the standards.

330. Separately, the AIIB experts may also visit certain sites to monitor the compliance. As has been mentioned above, in the case of non-compliance, the PIU will investigate the nature and cause(s) of the non-compliance and, if necessary, decide what is necessary to ensure the compliance with the sub-project or financing will be suspended.

- ***Reporting Requirements.*** The results of internal monitoring project related construction activities will be communicated with PIU, and AIIB through the quarterly project implementation reports as well as semi-annual social and enviremental monitoring reports (SSMR and SEMR), to assess whether actual project impacts are adequately addresses, compensation payments disbursed (if any), if due and grievance redress procedures are applied during the reporting period.

331. The information on possible social/economic impact incurred during project construction activities will be collected directly from the field by the CSC and will be reported through the project Coordinator at the AYA on a monthly basis. These monthly reports will then be quarterly consolidated by AYA and submitted to AIIB.

Table 35 Environmental and Social Monitoring Plan

Mitigation measures	Parameter to be monitored	Location	Frequency	Responsibility	Standards
Construction Stage					
1. Air quality	NO_X, SO_2, CO	At several points close to sensitivesites (schools, kindergartens, clinics.)	Weekly and in case of grievance from population	PMSC will hire certified laboratoryto conduct analysis	Hygienic norms. List of Maximum AllowableConcentrations (MACs) of pollutants in ambient air of communities in the RUz included Annex 1. SanR&N RUz No.0179-04 WHO Global Air Quality Guidelines 2021
	Dust PM 10.PM 2.5	At several points close to sensitivesites (schools, kindergartens, clinics.)	Weekly and additionalin case of grievance from population	PMSC	Hygienic norms. List of Maximum Allowable Concentrations (MACs) of pollutants in ambient air of communities in the RUz including Annex 1. SanR&N RUz No.0179-04 WHO Global Air Quality Guidelines 2021
2. Noise and vibration level	Noise level Vibration level	At several points close to sensitivesites (schools, kindergartens, clinics.)	Daily (by contractor) and weekly (by PMSC) in case of grievance from population	Contractor – ondaily base PMSC – on weeklybase	1. "Sanitarian Norms of allowed level of noise *at the construction sites*"SanR&N №0120-01 2. SanR&N No.026709 Sanitarian Rules and Norms on providing allowed noise level *in the living building, public building and territory* ofliving areas 3. SanR&N 0331-16 "Residential house design in climatic conditions of Uzbekistan" on providing vibration levels in residential houses are provided in
3.Water quality	Oil products, dry residual, BOD, COD,pH, ammonia, SO_4	In waterways close to the projectsites several samples in several points (before and after construction site). Measurementsshould be done during the ESIA preparation stage	1. Baseline before construction works 2. During construction works– twice per week	PMSC will hire certified laboratoryto conduct analysis	"Sanitarian requirements for development andapproval of maximum allowed discharges (MAD) of pollutants discharged into the waterbodies with waste waters". SanR&N No 0088-99

4. Vegetation	Cutting down or replanting vegetation	Along the project canals and roads	Once	PMC, local MEEPC representatives	Received permits on cutting down orreplanting vegetation
Social monitoring					
Construction Stage					
1.Damage to Infrastructure, public utilities, crop,cultural heritage	- Number of any non-compliance reports - Number o fpublic complaints / grievances.	Throughout the entire project areas in RoK and Khorezm region	During construction works on monthly basis	Contractor,CSC	All damaged infrastructure will be restored to original or better condition.
2.Traffic management	- Number of any non-compliance reports - Number o fpublic complaints / grievances. -Number of traffic accidents/incidents involving project vehicles and lorries bringing materials and supply to project	Throughout the entire project areas in RoK and Khorezm region	During construction works on monthly basis	Contractor,CSC	The approved Traffic Managent Plan (TMP) will be followed.
3.Public Safety	-Number of any non-compliance reports; -Number of any related public complaints -Number of accidents, incidents and near-misses.	Construction camps Prpject road sections under the recunstraction Contractor's offices	During construction works on monthly basis	Contractor,CSC	– Occupational health and safety procedures and OHS Plan – The Traffic Management – -Code of conduct – The World Bank Guidance Note[10] willbe used to address potential impacts caused by temporary project induced labor influx; –
4.Health and Safety	-Number of trainings conducted -Number of accidents, incidents, and near misses. - Number of any non-compliance reports - Number of labor complaints /	Construction camps Prpject road sections under the recunstraction Contractor's offices	During construction works on monthly basis	Contractor,CSC	– OHS plan, Code of condact – "Workers' Accommodation: Processes and Standards. A Guidance Note by IFC and the EBRD" (2009).

	grievances.				
5.Social and Gender Issues	Number of non-compliance reports; Number of related complaints	Construction camps Prpject road sections under the recunstraction Contractor's offices	During construction works on monthly basis	Contractor,CSC	The World Bank Guidance Note on gender-based violence (GBV) will be used to address potential impacts caused by temporary project induced labor influx;
Operational stage (*Maintenance period)*					
Ecological monitoring					
1. Air quality	NO_X, SO_2, CO	At several points close to sensitivesites (schools, kindergartens, clinics.)	Monthly and in case of grievance from population during the maintenance period	Contractor will hire certified laboratoryto conduct analysis	Hygienic norms. List of Maximum AllowableConcentrations (MACs) of pollutants in ambient air of communities in the RUz included Annex 1. SanR&N RUz No.0179-04 WHO Global Air Quality Guidelines 2021
	Dust PM 10.PM 2.5	At several points close to sensitivesites (schools, kindergartens, clinics.)	Monthly and additional in case of grievance from population during the maintenance period	Contractor	Hygienic norms. List of Maximum Allowable Concentrations (MACs) of pollutants in ambient air of communities in the RUz including Annex 1. SanR&N RUz No.0179-04 WHO Global Air Quality Guidelines 2021
2. Noise and vibration level	Noise level Vibration level	At several points close to sensitivesites (schools, kindergartens, clinics.)	Daily (by contractor) and weekly (by PMSC)in case of grievance from population	Contractor on weeklybase	4. "Sanitarian Norms of allowed level of noise *at the construction sites*"SanR&N №0120-01 5. SanR&N No.026709 Sanitarian Rules and Norms on providing allowed noise level *in the living building, public building and territory* ofliving areas SanR&N 0331-16 "Residential house design in climatic conditions of Uzbekistan" on providing vibration levels in residential houses are provided in
3.Water quality	Oil products, dry residual, BOD, COD, pH, ammonia, SO_4	In waterways close to the project sites several samples in several points (before and after construction site).	During maintenance operiod – once per month	Contractor will hire certified laboratoryto conduct analysis	"Sanitarian requirements for development andapproval of maximum allowed discharges (MAD) of pollutants discharged into the waterbodies with waste waters". SanR&N No 0088-99

Social monitoring					
1.Traffic management	- Number of any non- compliance reports - Number o fpublic complaints / grievances. -Number of traffic accidents/incidents involving project vehicles and lorries bringing materials and supply to project	Throughout the entire project areas in RoK and Khorezm region	During the maintenance on monthly basis	Contractor	The approved Traffic Managent Plan (TMP) for maintenance period will be followed.
2.Public Safety	-Number of any non-compliance reports; -Number of any related public complaints -Number of accidents, incidents and near- misses.	Project road sections under the reconstruction Contractor's offices	During the maintenance on monthly basis	Contractor	– Occupational health and safety procedures and OHS Plan – The Traffic Management – -Code of conduct – The World Bank Guidance Note[10] willbe used to address potential impacts caused by temporary project induced labor influx;
3.Health and Safety	-Number of trainings conducted -Number of accidents, incidents, and near misses. - Number of any non- compliance reports - Number of labor complaints / grievances.	Project road sections under the reconstruction Contractor's offices	During the maintenance on monthly basis	Contractor	– OHS plan, Code of condact – "Workers' Accommodation: Processes and Standards. A Guidance Note by IFC and the EBRD" (2009).

Capacity building

Capacity building on environmental aspects

399. It is proposed the Project's capacity building on environmental social aspects will cover three main directions:

(i) PIU's capacity on ESMP implementation during construction stage - to enhance PIU's capacity on the ESMP implementation PMC Environmental Specialist will provide respective training for PIU's and PIU's Environmental and Social Specialists and further assistance in monitoring SESMP implementation and guidelines for Contractor's Environmental and Social Specialists as required.

(ii) Karakalpakstan and Khorezm Region capacity on overall environmental performance during the project operation – PMC jointly with Environmental and Social Specialists will develop and conduct training program for proper disposal wastes, on general compliance with national environmental requirements such as timely receiving necessary permission, conduction monitoring of environmental performance and submission reports to respective national agencies and etc.

(iii) awareness program for population in the project area – for the project sustainability it is important along with physical interventions, institutional improvements and financial enhancing, to increase people awareness about road safety to the increased traffic.

400. In case of determining a presence of asbestos materials in demolishing pipes, separate training for handling and disposal of hazardous materials to be conducted by PMC for PIU and Contractors.

Capacity building on RPF implementation

401. To allow an effective execution of RPF, LARP/LAP/RP related tasks some expansion of the capacity on resettlement aspects currently available at AIA may be needed. As soon as the Investment Program becomes effective, before the LARP/LAP/RP preparation, once the IA's safeguards staff is on board, the AIA will carry out with AIIB and the Construction Supervision Consultant assistance a capacity needs assessment and will define the capacity building activities and if needed the additional experts required. Financing for capacity building initiatives will be included under the capacity building component of the Investment Program.

402. All concerned staff at PIU and GRC will undergo a two days orientation and training in AIIB Involuntary Resettlement policy and management to be provided either by a consultant hired by AIA or by the Supervision Consultant's Social Safeguards and Resettlement expert. Training will cover the following topics:

a. Principles and procedures of land acquisition;
b. Public consultation and participation;
c. Entitlements, compensation and assistance disbursement mechanisms;
d. Grievance redress, and
e. Monitoring of resettlement operations.

Table 36 Tentative training program for environmental and social aspects

Name of Training	Training Recipients	Duration of training	Organizer/ Responsible	Tentative Cost
ESMP				
Pre-construction Phase				
Overview on AIIB (2019, 2022) on safeguards and their implementation during the project cycle. National Environmental requirements for project preparation and implementation	PIU managers and Social and environmental specialists	1 day	CSC	2,000.0 USD
Construction Phase				
Implementation of ESF, ESMP 1) Roles and responsibilities of PIU/contractors/consultants towards protection of environment; 2) Potential specific Environmental/Biodiversity issues during construction; 3) Development of SEMP,TTSEMP and OHS Plan; 4) Monitoring of SESMP andOHSP implementation; 5) Reporting requirements; 6) GRM requirements 7) Code of conduct	PIU safeguards specialist, PIU environmental and social specialists Contractors' Environmental/ andSocial Specialists	1.5 days	CSC	3,500.0 USD
Implementation of SESMPduring construction phase Monitoring and reporting requirements Reporting requirements	Contractors' Environmental/ Health and Safety Specialists and Contractors' workers	1,5 days	CSC conducts training CSC monitors implementation	7000.0 USD
Training on SEMP and OHSPimplementation	Contractor s'workers	0.5 day	Contractors implement, CSC and CSC monitors implementation	8000.0 USD
Topic specific training: Training on management ofasbestos wastes	PIU, Contractos' workers	0,5 day	CSC	3000.0 USD
Gender aspects				

Gender Equality and Sensitivity Training	PIU, Contractors' workers	3 days	PIU with involvement of NGOs with relevant experience	5,000.0 USD
Training on business planning,marketing and financial management.	Women from the villages where project will be implemented	3 days	PIU with involvement of NGOs with relevant experience	20,000.0 USD
Skills trainings to unemployed women interested to gain new job opportunities	Unemployed women in the project area	3 days	PIU with involvement of Local employment centers	20,000.0 USD
RPF, SDDR/LARP/LAP/RP				
Implementation of RPF | SDDR/LARP/LAP/RP Development and implementation 1) Principles and procedures of land acquisition; 2) Public consultation and participation; 3) Entitlements, compensation and assistance disbursement mechanisms; 4) Grievance redress and Monitoring of resettlement operations.	PIU, PIU and Contractors	2 days	CSC	4,000.0 USD
Total				**72,500 USD**

RESETTLEMENT PLANNING

403. The Resettlement Planning Framework (RPF) is prepared by Avtoyulinvest" Agency (AIA) with support of RPLUS and EkoStandart JV, the Consultant (Republic of Uzbekistan), engaged by AIA to prepare the full package of Safeguards Reports for the given project. This RPF will be applicable for Karakalpakstan and Khorezm region

404. The hereby RPF applies only to Republic of Karakalpakstan and Khorezm region Local Roads Network Reconstruction Project and is prepared in compliance with the relevant legislation of Uzbekistan, and requirements of the Asian Infrastructure Investment Bank (AIIB). 37The RPF is subject to review and clearance by the GOU and AIIB.

405. The Project is proposed to be supported by the Asian Infrastructure Investment Bank (AIIB, or the Bank). It has been tentatively assigned to Category B under the Bank's Environmental and Social Policy (ESF 2022). The Project will require application of Environmental and Social Standard (ESS) 1 – Environmental and Social Assessment and Management and ESS 2 – Involuntary Resettlement (which includes land acquisition).

406. Planned activities under the proposed AIIB-financed Project include investments in reconstruction 516 km of local roads in the Republic of Karakalpakstan (encompassing 23 road sections spanning 328 km across 11 districts) and in the Khorezm Region (16 road sections covering 188 km across 9 districts). Additionally, the Project includes capacity building activities for the PIU and the development of a digital geospatial platform and Women and Youth Empowerment Program.

407. This RPF builds on the lessons learned from the preparation and implementation of land acquisition and involuntary resettlement instruments associated to numerous projects funded by various IFIs including AIIB and the best examples of practical experience obtained during implementation site-specific RAP s in infrastructure and energy sectors.

408. Therefore, this RPF will serve as the main guiding document for the development of site-specific Resettlement Action Plans (RAP) for each project district proposed within the framework of the given project supported to AIIB.

409. The RPF should be read in conjunction with the AIIB ESS 2 (ESF 2022) on Involuntary Resettlement and effective legislation of Uzbekistan. The RPF provides the guidance on how to prepare and implement RAPs, how to set out project goals and project implementation schedule, census and socio-economic survey, inventory of project affected asset, identification of severely affected and vulnerable AHs, cut-off date and eligibility criteria for project affected persons (APs), legal framework and institutional involvement, determines concepts of valuation methodology and approaches to be exercised during determination of unit rates per each type impact and loss to be compensated to APs, establishes compensation entitlements, which will be employed to compensate, and restore the livelihoods and living standards of APs. In addition, the document provides participation and public consultation procedures, grievance redress mechanism to timely address any inquiry or claim of any aggrieved persons during the entire project cycle.

410. The document outlines the resettlement principles and procedures ensuring that resettlement needs are identified, and the "Avtoyulinvest Agency", the Implementing Agency (EA) of the project adopts and implements the procedures for land acquisition, involuntary resettlement, and potential loss of access to physical and economic livelihoods in compliance with the Government's applicable laws and regulations, requirements of AIIB ESF 2022 and the best international practice.

335. The final RPF will be uploaded to the web sites of AIA and AIIB, and will be made available in

37 https://www.aiib.org/en/policies-strategies/_download/environment-framework/Final-ESF-Mar-14-2019-Final-P.pdf

electronic and printed format to project stakeholders.

336. The main objective of the RPF is to assist AIA at the phase of RAPs preparation aimed at identifying the types, nature, and magnitude of potential economic and/or physical displacement impacts and providing adequate measures to address these impacts to ensure that potential APs are:

- Informed about their rights and options pertaining to resettlement;
- Involved in meaningful consultation process and given the opportunity to participate in project planning and selection of technically and economically feasible alternatives; and
- Provided with prompt and effective compensation at full replacement cost for losses of land, assets, or access to assets and livelihoods because of sub-project works

337. The primary beneficiaries of this project are the citizens living in the twenty project districts. In Karakalpakstan Republic in the Kanlykul, Kegeyli, Takhtakupyr, Shumanai, Daukhara Dfh-Borshetov, Amurdarya, Beruniy, Nukus, Karauzak, Kungrad, Muynak districts and Bagat, Gurlan,Koshkupir, Urgench,, Khiva, Khazarasp, Shavat, Yangiarik, Yangibazar districts in Khorezm region , therefore the number of project stakeholders is large and includes all project impacted settlements and organizations located in the above mentioned project districts. (both male and female inhabitants), who will directly benefit from improvement of local roads conditions; Road Committee, "Avtoyulinvest" Agency, the Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Karakalpakstan, Department of Ecology, Environmental Protection and Climate Change of Khorezm region, the Ministry of Transport.

1.2. Project Impact and Outcome

532. The Project is expected to generate benefits in Karakalpakstan and Khorezm by improving the condition of regional roads to make them efficient and safer to use. The road reconstruction will be limited to existing roads only and the existing width of the roads will be maintained. New road construction and road widening is not anticipated as part of this Project. Therefore, all road works will be carried out on previously disturbed land with minimal impact on the local flora and fauna of the region.

533. The temporary negative impacts during construction of the road reconstruction subprojects will be related to air pollution, noise, water pollution, disposal of wastes, traffic disruption, access restriction for the community, and disturbance to the community due to influx of workers.

534. The negative impacts of the operation of the Project may include increased vehicle speed due to improved road condition which can cause serious accidents and loss of property and life. The project road needs to meet Good International Industry Practice safety standards including traffic signage, warning signs, traffic lights, reflectors, and pedestrian crossings (overhead or underground where possible/appropriate). In addition, liaison with the community will need to be maintained in addition to raise their awareness regarding safety risks associated with vehicular traffic.

1.3. Project Scope of Works

338. Eligible roads will include local roads that connect rural settlements to state and international roads. Targeted local roads have been selected through a screening tool jointly developed by the Bank and RC, based on established minimum requirements and prioritization criteria, including pavement condition, traffic volume, settlement population served, and connectivity to socioeconomic facilities and services around two socio-economical centers of Western Uzbekistan.

339. The existing roads in Karakalpakstan being repaired, spanning 328.1 km, are categorized within the III and V technical categories. More than half of the roads pass through populated areas. The width of the existing roadbed mainly ranges from 5-9 m. Nearly all sections of the existing roadway of the

roads being designed have longitudinal and transverse cracks, ruts, subsidence, waves, breakages, fading, flaking, potholes, and shifts.

340. The project involves the dismantling (milling) of the existing surface, and the construction of a road structure. Major repairs or complete replacement of bridge structures are planned. For the regulation and safety of road traffic, the installation of signs and indicators, signal posts, barrier blocks, markings, street lighting in populated areas, sidewalks, and bus stops are provided.

341. The existing roads in Khorezm region undergoing repair over a stretch of 188 km fall into the III and IV technical categories. More than half of these roads pass through populated areas.

342. The width of the existing roadway ranges from 5 - 9 m, with shoulders being 1.0 - 2.0 m wide. The current road surface is made of a petroleum-mineral mixture with a thickness of 3 - 24 cm. On all sections of the existing roadway of the planned roads, there are longitudinal and transverse cracks, as well as networks of cracks, ruts, subsidence, waves, breaks, discoloration, peeling, potholes, and shifts.

343. The project includes the construction of a road surface. A major overhaul (17 units) and complete replacement of bridge structures (77 units) are planned. To ensure regulation and safety of road traffic, the project includes signs and indicators, signal posts, fencing blocks, markings, street lighting in populated areas, sidewalks, and bus stops with shade canopies.

344. On completion of detailed design which will be developed by the Contractor according design-built concept, SDDR will be prepared for each sub-project and must be submitted to AIIB for approval. SDDR should justify whether RAP is needed for the sub-project. RAPs for each sub-project will be prepared where there is physical or economic displacement.

1.1. Purpose of RPF

345. Therefore, under the mutual agreement of Committee for Roads under the Ministry of Transport of the Republic of Uzbekistan and AIIB the decision was made to develop RPF applicable to Karakalpakstan and Khorezm Local Roads Network Reconstruction Project, that after being reviewed, will be publicly disclosed, and the final version should be agreed with the GOU and AIIB, will serve as the base document for further development of site-specific RAPs.

1.4. Project stakeholders

346. The spectrum of project stakeholders will be rather wide, commencing with individual farmers and households owners, legitimate possessors and users of the project affected land parcels, eligible for cash compensation, including commercial entities, business owners, local government and local communities that may not necessarily release their assets for project purposes in lieu of reasonable cash compensation but still gaining/sharing project benefits.

347. Local government and state institutions that will be involved in RAP preparation process as the agencies responsibility for a number of tasks to be accomplished during RAP preparation and implementation on behalf of the government of Uzbekistan. Chapter 8 ‘Consultation, Participation and Information Disclosure’ describes the procedures and actions to be undertaken during RPF and RAP disclosure, implementation and monitoring and evaluation of LAR results, as well as project construction period.

1.5. Gender Impact and Mitigation Measures

348. Women have important economic roles in project areas and engage in a very wide range of income making activities in the agricultural and marketing sector. The project will pay particular attention to ensure that women who are de-facto household heads are clearly listed as beneficiaries of

compensation and rehabilitation proceedings under the loan. In order to ensure the gender informed assessment and consultation processes the following actions will be considered:

349. Impact assessment of APs indicating the total number of families and people must be gender-disaggregated to pinpoint how many women are likely to be affected by the Project and establish their pre-Project conditions.

350. Women will be major participants in the consultation processes to determine and negotiate for compensation entitlements and RAP development and implementation.

351. Special attention will be given to project affected women and other vulnerable groups during on every phase on the given project.

1.6. Measures taken to minimize project adverse impacts

352. Reconstruction works will encompass pavement removal and replacement of asphalt and base layers, bridge repair and construction, drainage enhancements, installation of road safety and climate resilient measures and bus stops. Sidewalks will be added, particularly around schools, to enhance pedestrian safety. All reconstruction activities will occur within the existing right-of-way, eliminating the need for land acquisition and resettlement. Design-built Contractor will prepare the detail designs for this local road rehabilitation Project.

353. A project's resettlement planning begins during the feasibility studies and continues through final design studies and sometimes into project implementation. It may be possible at each point to avoid or minimize population displacement. Crucially, road reconstruction will occur within the existing right-of-way, eliminating the necessity for land acquisition and resettlement.

354. The design of each proposed project districts road sections will be prepared in accordance with required standards. After scoping and feasibility survey several alternatives of project design alignment will be prepared.

355. Each road section will be compared to the official cadastre data, to determine potential impact on private property. On site surveys will be undertaken per each alignment to assess approximate magnitude of affected structures (residential and commercial facilities), supplementary structure, perennials and annual crops, business stoppage etc.

356. Measures taken /proposed to minimize adverse impacts will be described in each RAP prepared for specific sub-projects and publicly disclosed.

1.7. Scope of Application and Works Covered by the Project

357. The preliminary surveys conducted by the Implementing Agency within the selected road sections location will reveal tentative impact of the proposed project. All reconstruction activities will occur within the existing right-of-way, eliminating the need for land acquisition and resettlement.

358. The proposed reconstruction works include climate resilient pavement reconstruction, bridge repair and construction, drainage enhancements, the installation of road safety measures, and the provision of bus stops. Where necessary, sidewalks will be added to enhance pedestrian safety. Furthermore, environmental impacts are expected to be minor, mainly linked to construction activities.

359. The feasibility studies should provide for (i) the selection of feasible and preferred options for the intervention, (ii) the preliminary designs for the agreed options/alternatives; and (iii) respective framework safeguard documents, including the Environmental Impact Assessment according the local standards (EIA).

360. The ESMPF will guide the ESMPs process and covers the following: rules and procedures for environmental and social screening of subprojects; guidance for conducting subprojects' ESMPs; mitigation measures for possible impacts of different proposed activities and types of subprojects to be supported by the project; requirements for monitoring and supervision of implementing of ESMPs, implementation arrangements. The ESMPF has also an overview of the capacity of the PIU and local involved institutions for E&S risk management. Based on this review, the ESMPF specifies capacity building activities that would include all these parties as well as activities on strengthening the capacity of participating local institutions on mitigating potential environmental and social risks and conducting subproject-level ESMPs.IA will consult with the Bank to determine the process to be used, taking into account the number of activities, including scoping, stakeholder engagement, potential environmental and social issues and any specific issues raised between the Bank and IA.

361. The ESMPs will allow determination of potential risks and impacts associated with the project and the level of applicability with AIIB ESF 2022 safeguard policy requirements for Involuntary Resettlement will be confirmed.

362. Social Due Diligence report (SDDR) will be prepared for the each sub-project with confirmed absence of LAR impacts.

363. Site-specific RAPs will be prepared in case the SDDR assessment confirms magnitude and physical or economic displacement.

364. To address the issues identified during the ESMP, the IA will use this RPF as the guiding document and prepare a Resettlement Action Plan (RAP) including Livelihood Restoration Plan (LRP) to cover project impacts associated with the project and ensure restoration of livelihood of project affected persons and communities within the project influence area, as needed.

365. The site-specific RAPs (if needed) will include detailed compensation and administration budgets and implementation schedules linking land acquisition and resettlement planning tasks to the initiation of civil works.

1.8. Conditions for Project Implementation

366. Based on the AIIB policy/practice, the approval of project implementation is based on the following conditions:

367. The contractor will prepare Detail Design of sub-project and ES Instruments such as site specific ESMPs, SDDRs and RAPs (if needed). The site-specific RAPs will reflect the final impacts of land acquisition, final Affected People lists, and compensation rates at full replacement cost approved by Avtoyulinvest Agency.

368. The contractor will not commence construction activities before the approval of each ES instrument as well as full implementation of Site-specific RAP (full delivery of compensation and rehabilitation allowances) and certified by RAP implementation Compliance Report prepared by Avtoyulinvest Agency and approved by AIIB.

1.9. Country Legislation, AIIB Policy and Measures to Mitigate Legal Gaps

369. The RPF provides the review of applicable country legislation and requirements of the AIIB ESS 2 Involuntary Resettlement to indicate the key elements of the AIIB ESF (2019,2022). The legal gap analyses are enclosed in the RPF to reconcile the gaps between Country laws/regulations and AIIB ESF (2019) through proposed mitigation measures.

1.10. Cut-off date, eligibility to compensation and Entitlement Matrix

370. As stipulated in AIIB ESF 2022 and as described in this RPF all project related impacts should be identified through the relevant studies undertaken for each sub-project during RAP preparation and addressed accordingly, meaning that all project affected persons will be provided with relevant compensation.

371. Compensation eligibility is limited to APs by a cut-off date.

372. The best practice is to use the completion date of the census of displaced persons as the cut-off date. Timing is important. If the cut-off date comes too early, it can disadvantage displaced persons.

373. Therefore, the cut-off date will be the completion date of final census of APs and inventory of project affected assets for the preparation of site-specific RAP.

374. APs who settle in the affected areas, or erect any fixed assets, such as structures, crops, fruit trees, and woodlots and other assets, after the cut-off date will not be eligible for any compensation.

375. Therefore, the information regarding the cut-off date and the actual boundaries of the ROW will be well documented and disseminated throughout the project influence area at regular intervals in written forms 38and verbally during public consultation meetings and non-written forms and in relevant local languages.

376. Relevant preventive measures will be undertaken not only during RAP preparation but while RAP implementation and construction process.

377. Each site-specific RAP prepared for specific project district will determine the cut-off date and this is the completion date of the final census of APs and inventory of project affected assets. The cut-off date will be defined for the whole project district and clearly stated in relevant RAP.

378. This RPF determines the eligibility criteria of project affected persons (APs) and provisions for compensating all types of losses: land, crops/trees, shelter, structures, business/employment, livelihoods and workdays/salaries/wages. All APs, including land users without title or legitimate possession will be compensated for lost income and assets, as described in this RPF and relevant RAPs prepared later for each specific proposed sub-project.

379. APs who are entitled to compensation under this Project include:

- Persons whose houses or structures are in part, or in total, affected temporarily or permanently by the Project;
- Persons whose residential dwellings, supplementary structures, fences/walls or commercial premises and/or agricultural land (or other productive land) is in part, or in total, affected (permanently or temporarily) by the Project;
- Persons whose business is affected temporarily or permanently by the Project;
- Persons whose employment or hired labor is affected, temporarily or permanently, by the Project;
- Persons whose crops (annual and perennial) and/or trees are affected in part, or in total, by the Project, and

38 Project Information Brochure and site-specific RAPs publicized and available to any interestedperson, posters displayed in public areas and information boards in the buildings of local Municipalities within project influence areas.

- Persons whose access to community resources, public facilities or property is affected in part, or in total, by the Project.

380. Households headed by single women with dependents and other vulnerable households11will be eligible for further assistance to fully mitigate project impacts. Table 2 below presents the Entitlement Matrix that will be closely followed during preparation of RAPs for each specific sub-project.

381. It is worth noting that the Entitlement Matrix presented in this RPF will be used as a guidance document, that will be altered in due manner to reflect any nuances detected during DMS, census, socio-economic surveys and inventory project affected assets undertaken during the RAP preparation period and provide relevant mitigation measures or reasonable approach for loss and impact compensation.

382. In none of these cases the APs will be liable for any taxes, registration or transaction fees incurred as a result of acceptance of cash compensation issued under the approved RAP. All such costs and fees will be covered by IA.

383. The RPF contains separate Chapter 6. Institutional Arrangements dedicated to the description of roles and responsibilities of number of State Agencies and Institutions on National and local levels being engaged in project planning and implementation procedures in line with the IA, PIU and Consultants. Below in Table 3 is provided the specific activities and responsible agencies in charge of preparation, implementation and completion stages of the proposed project.

Table 37 Institutional Roles and Responsibilities

Activity	**Responsible Agency**
A. Detailed Design and RAP preparation	
Conducting discussions/meetings/consultation with APs and other stakeholders	AIA (PIU), National and International Resettlement Consultantshired by AIIB, district Khokimyat, Farmer's and Dehkan Councils and Mahalla authorities
Disclosure of final entitlements andrehabilitation packages	AIA (PIU), District Khokimyats
Approval of Final site-specific RAP	AIA , AIIB
B. RAP Implementation Stage	
Disbursement of compensation andassistance	District Khokimyats, AIA (PIU)
Taking possession of land	AIA through the assistance of districtKhokimyat
Implementation of proposed rehabilitationmeasures	AIA (PIU)
Grievances redress	AIA (PIU) through the SafeguardsSpecialist, CSC, District Khokimyats
Monitoring and Reporting	AIA (PIU) through the SafeguardsSpecialist, CSC
C. Completion Stage	
Restoration of land by the contractor alongthe Right of way and other construction sites	AIA /CSC will ensure that contractorfollows the norms as mentioned
Restoration of approach roads and access ifdisturbed during construction	AIA /CSC will ensure that contractorfollows the norms as

	mentioned
Consultation with local people regarding any further grievance	AIA (PIU), CSC

1.11. Participatory Involvement, Public Consultations and Documents' Disclosure

384. Public consultation and participation plan will be included in the Project to involve the stakeholders, especially the people either directly benefiting from, or affected by the project, through participation in the design, implementation, and monitoring of the sub-projects. All communications will be in the language most appropriate for involved and engaged parties in the project area. During RAPs preparation and implementation, the Consultant with assistance as required from the AIA will undertake the following:

385. Conduct information dissemination and consultation for all APs, NGOs and other stakeholders;

386. Establish the rates/unit prices to be used as the basis of compensation awards, and possible impact on properties identified through the DMS/census, demarcation and inventory, in consultation with APs;

387. Conduct a survey (as part of the IOL/DMS) to:

388. inform them about possible resettlement options;

389. request information from APs about their preferences and choices of resettlement options; and,

390. request that APs indicate services such as education/health/markets that they are currently using and their distance from such services;

391. Consultation regarding the APs preferred option for livelihood stabilization and/or rehabilitation assistance (where required). This applies to APs experiencing significant impacts and vulnerable APs.

392. The stakeholder consultations will be carried out throughout the E&S studies (RAP, ESMP). Once the RAPs are prepared, they are subject to public consultation meetings. During the public consultation meetings, RAPs documents will be distributed to all interested parties and local communities, by posting them on the web sites and by putting hard copies in the project areas.. At the consultation meetings, the E&S team of the Detail Design Contractor in cooperation with the PIU E&S specialist will present the ESMP and/or RAP (project, its location and implementation schedule, overview of the E&S study process, and any conclusions on impacts, proposed mitigation measures and benefits) to the participants.

393. The public consultation meeting on the ESMP and/or RAP of a specific subproject will include an announcement of PIU meeting on the website and local mass media at least two weeks before the session, with a brief description of the project, location and specific contact details (including telephone numbers). In addition, the E&S team of the Detail Design Contractor, in collaboration with the PIU, will make an announcement in the local, district Hokimiyats about holding a public consultation meeting by means of a written short booklet together with an invitation to participate in the meeting. Documentation of the consultations should be submitted to PIU E&S Specialist.

394. Versions of the E&S documents in Russian and Uzbek and records of stakeholder consultations should be posted in a public place close to the construction site, as well as on the websites of PIU.

395. The E&S documents (ESMPs and RAPs) for the subprojects will require prior-review and acceptance by AIIB. For all approved subprojects, the PIU will ensure that printed copies of the final ESMP and/or RAP in the local languages are available in a public place.

396. The PIU will disclose the final E&S documents on the websites of PIU. Before the final approval of the subproject, PIU will also submit the final documents to the AIIB for its own records.

1.12. Application of GRM

397. The PIU will set up a project-level Grievance Redress Mechanism (GRM) following the policy requirements of AIIB39 and laws of the Republic of Uzbekistan. 40The GRM shall respond to the inquires and resolve appeals and complaints of people who believe they have been or are likely to be adversely affected by social and environmental impacts of the project activities, and/or have complaints about the project's information disclosure and public consultation process.

398. The project-level GRM shall respond to the inquiries and resolve appeals and complaints of people in prompt, impartial and mutual consensus manner at the project level. This will help to response to the issues of citizens, to track a problem and avoid potential escalation of project affected people's complaints, and risks for delay and complaint related to the costs in the project implementation.

399. The appeals/complaints eligibility for handling through the project-level GRM shall meet the following criteria: (i) issues related to the project's social, involuntary resettlement and environmental impacts and performance outcomes, and (ii) issues, related to the project's information disclosure and public consultations process. Appeals/complaints, related to crime, fraud, and corruption issues, will be registered in the grievance logbook, however they are not eligible for handling under the project-level GRM and shall be handled as defined by laws of the Republic of Uzbekistan and relevant policies of the AIIB.

400. The project-level GRM does not override the complainants' rights to demand grievance redress as defined by national legislation. The complainant at one's discretion may choose to seek the complaint consideration through the judicial system of the Republic of Uzbekistan at any time of the grievance redress process provided hereby.

401. At the same time Subcomponent 3.1 of the project ToR included Development of Digital Geospatial Platform. The objective of this subcomponent is to create a sophisticated, web-based GIS platform that serves multiple purposes as well as a streamline grievance registration and monitoring, allowing the Project Implementation Unit, supervision consultants, and the Committee for Roads to manage incoming complaints, generate alerts, and track responses in real-time.

402. The Platform will:

- Provide, advice, register and refer complaints to the road sections for investigation and monitoring, and manage the analysis and reporting of complaints data.
- Visualize the residents' complaints regarding the issues arising from the project construction based on the Project Level Grievance Redress Mechanism and Bank's Grievances Mechanism
- Ability for the users to upload a location verified pictures and photos of safety hazards (potholes, missing safety signs etc.) using telegram channels, weblink, application or the like to identify non-compliance with safety requirements.
- Register complaints and refer them to the related department/officer for investigation and response

39 https://www.aiib.org/en/policies-strategies/_download/environment-framework/AIIB-Environmental-and-Social-Framework_ESF-November-2022-final.pdf

40 The Law of the Republic of Uzbekistan "On Appeals of individuals and legal entities" No. LRU-378 dated December 3, 2014 (No. LRU-445 as amended from 09 November 2017)

- Monitoring the progress of investigations to ensure they are dealt with in a professional and timely manner

403. The IA will disclose the GRM on its website for the attention of public. The information given to the public should include the contact details of the GRC at the local level and the GRC at the Second level at the PIU and channels, through which the complainant can lodge their grievances, and the list of members of the GRC.

1.13. Monitoring and Reporting Requirements

404. The Project will establish systems for internal monitoring and evaluation. The main purpose of the monitoring and evaluation programme is to ensure that resettlement and acquisition of land and properties have been implemented in accordance with the provision of AIIB's ESF 2022, the laws of Uzbekistan and with this RAP.

405. The AIA will conduct regular monitoring and assessment of project implementation process through following the procedures established and by the company.

406. To achieve the main purpose and objectives of internal monitoring the AIA will ensure to provide significant attention to the following aspects of project implementation process:

407. Frequency and quality of information campaign and consultations hold for project affected people

408. Status of land acquisition and payments of compensations for project affected assets

409. Status of provision of additional rehabilitation and mitigation measures

410. Close monitoring of complaints and grievance management.

411. PIU and Desing Built Contractor will be responsible to conduct the internal monitoring of RP implementation with the support from the consultants. Some of the key activities that would be monitored include:

- timely payment of compensation and assistance and prior to the commencement of civil works;
- processes followed in the dissemination of information on the project and eligible entitlements as well as the quality of consultations;
- processes followed in the relocation of PAPs as per relocation plan, if displaced;
- provision of replacement cost (towards the cost of structures, shifting and replacement house);
- relocation of all common properties such as toilets, temples, etc.
- the provision on livelihood support measures, training towards rehabilitation;
- provision of work opportunities to PAPs and other community members during civil works; and
- grievances received and redressed by level.

412. The PIU will also be responsible for record-keeping, management and internal monitoring of the GRM. PIU will also engage consultants for external monitoring and evaluation of the project implementation if needed or required by AIIB. The consultants will undertake monitoring and verification of processes and activities of RP implementation and would submit quarterly reports. It would also undertake an end-term evaluation post RP implementation to ascertain if the RP objectives have been achieved. The consultants will identify gaps based on desk reviews and field visits and provide timely inputs for course-correction to the PIU to improve implementation and outcomes. Besides, it will recommend measures necessary to build capacity and provide requisite training to implementation staff and other stakeholders such as civil works contractor.

413. The results of internal monitoring during RAP implementation as well as project related construction activities will be communicated with AIA , and AIIB through the quarterly project implementation reports as well as semi-annual social monitoring reports (SSMR), to assess whether actual project impacts are adequately addresses, compensation payments disbursed, if due and grievance redress procedures are applied during the reporting period.

414. The information on possible social/economic impact incurred during earth works and project construction activities will be collected directly from the field by the Supervision Consultant and will be reported through the project Coordinator at the AIA HQ on a monthly basis.

415. These monthly reports will then be quarterly consolidated by AIA and submitted to AIIB.

1.3. Resettlement Budget and Financing

416. Site-specific RAP preparation and implementation costs, including cost of LAR administration, will be considered an integral part of the Detailed design Contactor project cost. The funds for compensation will be contributed as a counterpart fund by the Government of Uzbekistan, allocated by MoF will be delivered to APs by AIA according the budget section in RAPs.

417. Each site-specific RAP will include a budget section indicating (i) unit compensation rates for all affected items and allowances; (ii) methodology followed for the computation of unit compensation rates; and (iii) a cost table for all compensation expenses including administrative costs and contingencies. Costs for l monitoring tasks and for the preparation of surveys may be allocated under the MFF.

418. AIA is responsible for ensuring timely allocation of funds by MoF needed for RAP implementation. Allocations will be reviewed twice a year based on the budget requirements indicated by theAYAand AIIB. As per the LAR finances flow the budget for compensation and rehabilitation will be directly disbursed by AIA to the AP.

GENDER ACTION PLAN FRAMEWORK

639. During the community meetings and focus group discussions conducted early in September 2024, the Consultants identified several gender-related issues that have implications for the project. These included a high unemployment rate among local women, limited job opportunities, and limited mobility and access to markets, employment, education, and health services in connection with poor road condition and public transport.

640. In response to these challenges, local community leaders and women focus groups suggested addressing these issues by providing relevant training to help them improve their knowledge and skills in viable livelihood activities. Additionally, they proposed the construction of safe points of roadside trade in agricultural products and food, assistance in the development of public transport to improve their access to markets, employment, education, and health services. These enhancements would help increase the level of self-employment among the women and allow local women to allocate their time to other productive activities.

641. The proposed GAP is designed to address the current community issues and empower local women to improve their circumstances. A GAP is presented in **Table 38**. It will be finalized during the project implementation.

Table 38 GAP for Rehabilitation of the Local Roads Network in Karakalpakstan and Khorezm Project.

Category	Activity	Indicators	Responsibility	Timeline
Institutional Capacity Development on Gender Mainstreaming	Hiring a regional social and gender specialist for ensuring that social and gender aspects are taken into account integrated into all project activities and decision-making processes.	Regional Social and Gender Specialist hired during the project implementation	PIU	At the beginning of the project
	Integrate gender-specific data collection into project monitoring and reporting for a more inclusive evaluation	Project M&E includes collection and analysis of gender disaggregated indicators, including the following: • PCU staff by gender and by positions. • Project impacted road users by gender (women headed separately). • Project beneficiaries by gender. • Local Community workers hired by contractors by gender. • Project resettled people by gender. • Grievances (related to project) by gender	PIU	At the beginning of the project
	Promote the involvement of women in project management activities.	More than 10% of the total number of project team employees are women specialists	PIU	During the project
	Conduct Gender Equality and Sensitivity Training for PCU staff, regional RC authorities and Contractor Managers. One training organized each year	Training Module on Gender Responsive Transport and project Gender Action Plan. The training participants have a good understanding of the gender aspects of the project.	PIU	At the beginning of the project/intermittently
Road design and construction	Inclusion in design documents of installation of street solar lighting at taxi/bus stops.	Projects and construction works taking into account the needs of women and children and disabled people	PIU Contractors	Construction design stage
	Construction of pedestrian sidewalks on road sections where community residents often move (schools, family clinics, markets)	Projects and construction works taking into account the needs of women and children and disabled people	PIU Contractors	Construction design stage
Promotion of women's employment in project work	Through trainings raising the Contractor Manager's awareness of gender issues, the importance of creating equal opportunities when hiring women and men, if they have the same competencies to perform the work.	Contractor Managers are aware of the gender issues that take place in project activities.	PIU	During the period of signing contracts
	In the contract with contractors, include clauses on their responsibility in cases of violation of women's rights to employment and sexual harassment at the workplace.	The contract with contractors includes gender issues.	PIU	During the period of signing contracts
	Encourage Contractor Managers to publicly	Job advertisements are available to all	PIU	During the period of

	announce vacancies for potential candidates without gender and age requirements (over 18 years old)	candidates, including women		signing contracts
	Employment of women in construction and road maintenance through adequate campaign promoted.	Women hired after a recruitment campaign.	Contractors	During the project
	Creation of safe and women-oriented working conditions on construction sites (changing rooms, toilets).	• Adequate facilities for women in construction sites established	Contractors	During the project
	Raising awareness of contractor employees about the prevention of sexual harassment.	• Contractor to be provide specific on-the-job training to workers (as required) with special focus on targeting female workers Information material on the topic • Awareness of sexual harassment among female and male employees of contracting organizations	Contractors	During the period of signing contracts
Public health and safety	Organize consultations with communities, specifically women, on health, safety and sexual harassment in construction projects, grievance procedures and discuss income-generating opportunities	Intermittent consultations	PIU Social and gender specialist	During the project
	"Road safety lessons" for students, for elementary school students of all schools located on the project territory	Schoolchildren of grades 1-4 took road safety lessons once again.	Social and gender specialist	During the project
	Information about helplines for women	Women know where to address in cases of sexual harassment and violence.	Social and gender specialist	During the project
Manage the GRM	Information on the mechanism for filing complaints in cases of project has effect on health and safety of people, especially women and children, is available to the public. .The Contractors Social Specialist will receive appropriate training from an authorized GBV Service Provider on how to collect GBV cases confidentially and empathetically (with no judgement).	• Include women members in the GRC Grievance redressal committees (GRCs) to be formed/established. • The community affected by the project knows where and how to file a complaint • Maintain sex disaggregated data on complaints filed and redressed.	Social and gender specialist	During the project
Supporting women entrepreneurship in project area.	The study of traditional /permanent points of roadside trade in agricultural products and their reflection in project documents.	The project documentation reflects the places where women can earn income	PIU	At the design stage
	In consultation with community leaders, create safe points for roadside trade of agricultural products.	Sites for the sale of agricultural products of local households	PIU Contractors	During the project
	Compensation for demolished retail and	Women business owners who have received	PIU	During the project

	food outlets headed by women to rebuild the business.	compensation for permanent or temporary loss of income		
	Teaching women the basics of entrepreneurship, marketing and financial management	At least 5 women from the target areas received training in business planning, marketing and financial management using new opportunities of renovated roads	Social and gender specialist	During the project
Implement, monitor, and report on GAP	GAP reporting and tracking	• Progress monitored regularly and reported in monthly and quarterly reports. • Prepare GAP completion report highlighting lesson learned and good practices.	PIU Social and gender specialist	During the project

GRIEVANCE REDRESS MECHANISM

Objective and scope of the GRM

642. The PIU will set up a project-level GRM following the policy requirements of AIIB41 and laws of the RUz42. The GRM shall respond to the inquires and resolve appeals and complaints of people who believe they have been or are likely to be adversely affected by social and environmental impacts of the project activities, and/or have complaints about the project's information disclosure and public consultation process.

643. The project-level GRM shall respond to the inquiries and resolve appeals and complaints of people in prompt, impartial and mutual consensus manner at the project level. This will help to response to the issues of citizens, to track a problem and avoid potential escalation of project affected people's complaints, and risks for delay and complaint related to the costs in the project implementation.

644. The appeals/complaints eligibility for handling through the project-level GRM shall meet the following criteria: (i) issues related to the project's social, involuntary resettlement and environmental impacts and performance outcomes, and (ii) issues, related to the project's information disclosure and public consultations process. Appeals/complaints, related to crime, fraud, and corruption issues, will be registered in the grievance logbook, however they are not eligible for handling under the project-level GRM and shall be handled as defined by laws of the RUz and relevant policies of the AIIB.

645. The project-level GRM does not override the complainants' rights to demand grievance redress as defined by national legislation. The complainant at one's discretion may choose to seek the complaint consideration through the judicial system of the RUz at any time of the grievance redress process provided hereby.

646. At the same time Subcomponent 3.1 of the project ToR included Development of Digital Geospatial Platform. The objective of this subcomponent is to create a sophisticated, web-based GIS platform that serves multiple purposes as well as a streamline grievance registration and monitoring, allowing the Project Implementation Unit, supervision consultants, and the Committee for Roads to manage incoming complaints, generate alerts, and track responses in real-time.

647. The Platform will :

- Provide advice, register and refer complaints to the road sections for investigation and monitoring, and manage the analysis and reporting of complaints data.
- Visualize the residents' complaints regarding the issues arising from the project construction based on the Project Level Grievance Redress Mechanism and Bank's Grievances Mechanism

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41 https://www.aiib.org/en/policies-strategies/_download/environment-framework/AIIB-Environmental-and-Social-Framework_ESF-November-2022-final.pdf

42 The Law of the RUz "On Appeals of individuals and legal entities" No. LRU-378 dated December 3, 2014 (No. LRU-445as amended from 09 November 2017)

- Give the ability for the users to upload a location verified pictures and photos of safety hazards (potholes, missing safety signs etc.) using telegram channels, weblink, application or the like to identify non-compliance with safety requirements.
- Register complaints and refer them to the related department/officer for investigation and response
- Monitor the progress of investigations to ensure they are dealt with in a professional and timely manner

Forms of lodging grievances / appeals

648. The following include the forms of lodging grievances / appeals:

- Grievances and appeals can be submitted orally or in written, or in electronic forms;
- Grievances and appeals, received by contact numbers, as well as by telephone "hotline" are taken into account, registered and considered as oral messages;
- Grievances and appeals, received from the Telegram messenger, through the official website or to the official e-mail address are registered in the form of electronic appeals and are considered in the prescribed manner;
- Grievances and appeals can be in the form of statements, suggestions, and complaints.
- Individuals and legal entities can apply individually or collectively.
- Grievances and appeals can be submitted in the state official language and other languages.

649. In the grievance or appeal of an individual and / or legal entity, should indicate the surname, name (patronymic, if available) of the individual, information of his / her place of residence and the essence of the appeal, contact person and his/her contact information must be indicated.

650. If the complainant wishes to remain anonymous, and grievance or appeal received anonymously, such cases shall be registered and verified. The Grievance Redress Committee (GRC) at Tier 1 evaluates, if it is legitimate according to situation presented in the anonymous grievance or appeal, and act on behalf of the complainant, evaluate and resolve the issue. If the arguments stated in the grievance are not confirmed, a conclusion is drawn up about this, where the reasons of terminating the redress of the current grievance are stated. A conclusion of terminating the grievance redress is confirmed by GRC members, after that the complaint is removed from control.

651. It is possible, that anonymous grievances or appeals may become more difficult to consider, resolve the issue and protect the interest of the complainant. Therefore, the complainants, raising anonymous grievances or appeals shall provide sufficient facts and data to enable the GRC to investigate the case. The feedback and decision made, the actions planned and implemented regarding the anonymous grievances and appeals, shall be (i) printed and posted on the information boards of the regional road departments and relevant Khokimiyat, and (ii) send back to the same source, where the anonymous grievance or appeal has been received from (e.g. unknown media account), if applicable.

652. The GRC members, involved in implementing the GRM, make sure, that confidentiality / anonymity is respected.

653. Outcomes of all grievances and appeals, and their resolution process will also be documented in the grievance database and reflected in the project periodic progress reports.

Institutional Structure of the GRM

654. The "Avtoyulinvest" Agency, will be responsible for effective operation of the project-level GRM, will establish a data base of all received grievances and ensure monitoring of its consideration, analysis and reporting in the project implementation, social and environmental safeguards reports. Other stakeholders of the project, as Main Road Department of the Republic of Karakalpakstan and Khorezm Region", contractor(s), CSC shall take an active part in resolving grievances and appeals.

655. Contractor(s), CSC , and Main Road Deaprtment of the Republic of Karakalpakstan and Khorezm Region shall register and report each case of grievance they received from complainants, to the PIU under the "Avtoyulinvest" Agency, who will have a general database of all grievances and monitoring their status, as described in below sub-sections.

Grievance Focal Persons

656. The Grievance Focal Persons (GFP) at the district level: Each of the project district level of RC will assign one of its staff as a coordinator (GFP) for the subject district. The district level coordinator (GFP) shall ensure that all received grievances are registered and shall facilitate their resolution at the district level (GRM Tier 1). They will provide information about each received grievance and their resolution process and status to the coordinator (GFP) at the PIU level.

657. The coordinator (GFP) at the PIU level: The Social and Environmental Specialist of the PIU will act also as a GFP at the central level at PIU. The GFP at the PIU level will have the general database of all received and redressed grievances both at Tier 1 and Tier 2 of the GRM. The GFP at the PIU level will coordinate the redress of grievances at Tier 2, monitor and report on grievance redress both in Tier 1 and Tier 2

658. Contact details of the coordinators (GFPs) at the district level, as well as contact information of the GRCs at the district level and central level at PIU will be indicated in the websites of AYA as well as in the project information dissemination materials for public consultation during all stages of the project implementation.

659. The coordinators (GFPs) of the district level, contractor and PIU staff if relevant shall respond directly to the appeals, inquiries, and grievances promptly with use of informal approaches and within business ethics to resolve the issues promptly. This includes, as possible, discuss with complainant their inquiries, concerns and / or grievances and to provide them responses or find solution informally at the source of the problem. As required, they can transfer the complainant and the case to the district level GFP.

660. If required, the district level GFP shall coordinate with the project team including the contractor(s), construction supervision consultant and the PIU, to respond to the inquiries, appeals or grievance regress of the citizens promptly. If the matter cannot be responded by district level GFPs, it will be handled through the two-tier project-level GRM as follows.

Grievance Redress Mechanism Description

661. A two-tier project-level GRM will be established during the project preparation

phase.

662. **Tier-1: Local Grievance Redress Committee.** The Tier 1 Grievance Redress Committee (GRC)will comprise of:

a. Supervision engineer (with E&S staff in charge);
b. Representative of the contractors (member);
c. Head of the makhalla foundation (member);
d. Representative of district Road service organization.
e. Representative of district Road service organization as a GFP for the subject district.

663. If necessary, appropriate specialists may be involved to consider applications for appeals, or the GRC will send an appeal to the relevant party to resolve the issue raised in the prescribed manner. Depending on the nature of the appeal, it can be submitted for consideration to state authorities and local authorities (khokimiyat, meeting of citizens of the mahalla), contracting and road service organizations, as well as specially authorized state bodies.

664. The aggrieved persons (complainant) can contact any GRC representative, and they will be responsible for receiving, hearing and resolving the grievances at this level.

665. GRG will consider and decide on the grievance within fifteen (15) days from the date of receipt and when additional study is required, a request for additional documents - within a period of up to one month.

666. The grievance is considered within 15 days from the date of receipt, except for those proposals that require additional study, about which communicated in written form to the individual or legal person who made the proposal. In some cases, GRC may shorten the period for considering the appeal.

667. If the complaint cannot be considered and / or decision cannot be made at this level, or if the complainant is not satisfied with the proposed resolution, the GRC should forward the case to the PIU at central AYA level.

668. **Tier-2: Second Level Grievance Redress Committee**. The Tier-2 includes the GRC at the PIUcentral level at AYA that will be formed by the end of 2024 and include the followings:

a. Project Coordinator, PIU, Chairperson;
b. Social and environmental specialist, PIU, member;
c. Chief specialist of Karakalpakstan and Khorezm Region Government department, member;
d. Head of the department for the coordination of works on land acquisition and compensation ofthe Karakalpakstan and Khorezm Region, member;
e. Staff of the information service of Main Road Department of the Republic of Karakalpakstan and Khorezm Region.

669. In necessary cases, appropriate experts shall be involved to consider appeals following the procedures envisaged in national laws and regulations.

670. The GRC at this level considers the appeals and complaints within fifteen (15) days upon receipt.If the appeal / complaint cannot be resolved at this level, or if the complainant is not satisfied with the proposed solution, the case may be brought to

the court as defined by jurisdiction of the RUz. The courtis outside of the project-level GRM's jurisdiction. The **Figure 22** presents the complaints resolution process in sequential order.

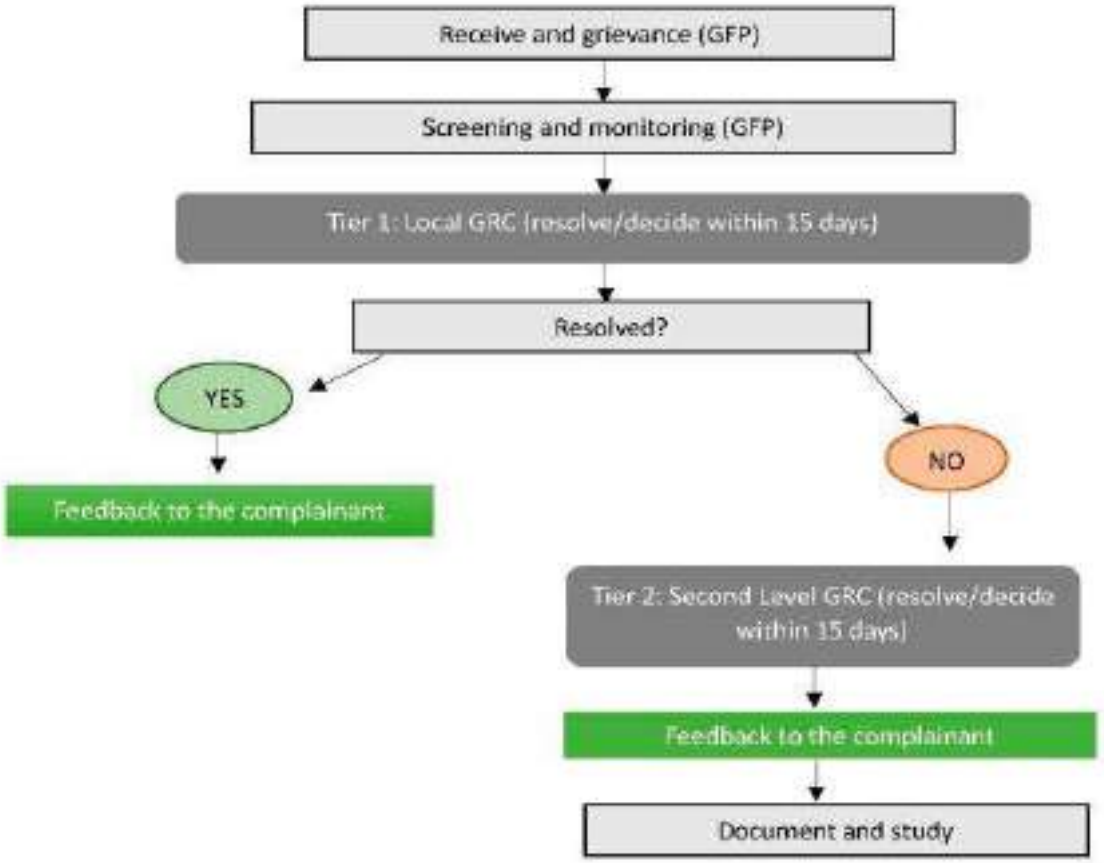


Figure 23 Grievance Redress Mechanism Structure

671. The grievance redress process, depending on the complexity of the issue, includes the following actions:

672. **Receiving grievances.** The GFP at the district level shall receive appeals and complaints directly from the complainant or made through any staff of the project, members of the GRC at the local level or second level GRC at PIU. In case a complaint is lodged through the project staff members, members of the GRC at the local level or GRC at PIU central level, or other respective agencies, they shall forward it to the subject district GFP to register, coordinate, and document the complaint resolution process. Annex 1 has a sample of a Complaint/Appeal form (i) Registration of grievances. The district level GFPs should register a grievance in appeals / complaint registry logbooks for their respective districts (Annex 2). The GFP at PIU level should maintain an electronic database of all the received grievances and appeals. A simple excel sheet can be used for this purpose, which also allows sorting, filtering, and conditional formatting.

673. **Screening and confirmation.** The district level GFPs should assess the received appeals / grievances if it is related to the project's operations and eligible for the redressal through the Project's GRM.

674. If the appeal / grievance is eligible for this GRM scope, the district level GFP

shall inform the complainant accordingly. Within three (3) days of receipt of the appeals / grievances, the district level GFP shall:

- Send acknowledgment of receiving a complaint to the complainant, informing about accepting it for consideration, the next steps, and expected date of response to the complainant; and / or
- Request the complainant to provide clarifications / information, if required.

675. If the appeal /grievance is ineligible for this GRM scope, the district level GFP shall inform the complainant accordingly that the subject grievance cannot be considered through the project GRM, and within a period not later than three days from the date of receipt by letter, it shall be sent to the relevant authorities with a message about this to the applicant, in writing or in electronic form.

676. Grievance / problem statement formulation. Clarify the claims of the complainant(s) and formulate a clear, precise and comprehensive problem / grievance statement including information such as:

- Who, how many are affected;
- What happened, when, and where;
- What is a claim / resolution is expected by the complainant.

677. **Data collection and analysis.** Collect and analyze information, document the appeals / grievances through relevant approaches such as:

- Collection and review of documents, background information (e.g. documents, photos, video materials, meeting notes);
- Meetings with the complainant, any other relevant stakeholders, and conduct joint site visits; if the appeals / grievances contain circumstances that require study on the spot, as well as in other necessary cases, considering the appeals/grievance, must ensure that the appeals / grievance is considered on-site;
- Subject to the nature of the case, engage the relevant government and independent experts, hold meeting with the experts and complainant, seek further clarifications, and prepare records of meetings;
- At this stage, when more information is collected and analyzed, check if the grievance/problem formulation is the same or need to make changes, if necessary.

678. **Document process.** The GFPs both at the district level and the PIU level should document the appeals / grievances and information collected for each case and submit to the GRCs at the local / regional level and second level at PIU, if relevant.

679. Hearing the grievance and identifying resolution options. Based on collected and analyzed information, conduct the grievance hearing with participation of the complainants and / or their representative(s) to consider grievance resolution options.

680. Develop and select resolution options. Develop options and select the one, that is feasible to implement and accessible / acceptable for all in consensus manner. To

assess feasibility these questions can be used:

a. Can it be implemented in a reasonable time?

b. Can it be done within cost limits?

c. Will it work reliably?

d. Will it use staff and equipment efficiently?

e. Is it flexible enough to adapt to changing conditions?

681. To assess accessibility / acceptability, these questions can be used:

a. Do the implementers support the solution, perceiving it as worth their time and energy?

b. Are the risks manageable?

c. Will the solution benefit the people affected by the problem?

682. **Get confirmation from the complainant.** Receive written consent or disagreement of thecomplainant with the proposed solution. Have a meeting, discuss the option and its outcome with the complainant.

683. **Develop and implement a timebound action plan.** If the complainant agreed to the proposed solution, prepare timebound action plan, indicate required resources, and responsible parties to implement the decision made for the grievance resolution. An action plan shall indicate the necessary actions and consider the following questions:

a. What actions or changes will occur?

b. Who will carry out these changes?

c. By when will they take place, and for how long?

d. What resources (e.g., money, staff) are needed to carry out these changes?

e. Communication (who should know what?)

684. **Complaint Closing and Reporting.** Upon execution of the timebound action plan:

a) Send a written confirmation to the complainant about the undertaken actions and outcomes;

b) Have a meeting with the complainant to ensure that complainant's claims have been addressed in full and no further action is required, confirmed through a meeting protocol with the complainant.

685. Prepare the grievance closing report with all documents filed for the case. The essential components of a problem report include the following:

- Executive summary;
- Background;
- Review and assessment;
- Course of action,
- Recommendation, and schedule;
- Conclusion.

686. If the appeal / complaint cannot be resolved at this level, or if the complainant is not satisfied with the proposed solution, the case may be brought to the court as defined by jurisdiction of the RUz. The court is outside of the project-level GRM's

jurisdiction.

Worker GRM

687. The following presents the worker grievance mechanism procedure that will be implemented by Contractor and also includes measures for escalation of grievances by workers.
688. It is important to note that the Contractor Social Specialist will act as the Worker Grievance Mechanism coordinator and apply the requirements of this mechanism as detailed below.
689. At first, all employees are encouraged to resolve any grievances through communication with their direct manager Therefore, the grievance mechanism starts through a verbal notification by the employee to their direct manager. The direct manager or supervisor shall give his/her verbal reply within three (3) working days. If the grievance is solved through direct communication with managers, then the employee does not need to submit a written grievance separately. The grievances should still be reported by the relevant managers to the Contractor Social Specialist to be recorded within a grievance log sheet. If the complaint is against the direct manager , then the procedure set out below should be followed instead.
690. In case the grievance is not resolved through direct communication, or if the employee is not satisfied with the response or action to the complaint by the direct manager, then the employee shall submit a grievance form, which includes information on the name of the employee, contact information, description of the grievance and the suggested solution to resolve the grievance.
691. Grievance forms and a grievance box will be made available at all times during construction at key locations onsite (e.g. office locations and other as appropriate). The grievance form will be available in Project languages. Location of grievance forms and grievance box will be communicated to all employees as part of the induction training by the Contractor Social Specialist.
692. The Contractor Social Specialist will check daily the grievance box to collect any submitted grievance.
693. In addition, where the complainant is illiterate, the complaint can be made verbally in confidence to Contractor Social Specialist whom in turn will complete the grievance form on behalf of the complainant.
694. In addition, a hotline for workers will also be available for those having difficulty in written expression as per the below details. The hotline will be managed and handled by the EPC Contractor Social Specialist.
695. The Contractor Social Specialist will follow up on the grievances submitted and aim to resolve the grievance. The Social Specialist will analyze the root cause of the grievance, investigate if the grievance is correct or not, and provide an attainable solution to resolve the grievance in coordination with the employee, direct manager, and other personnel as appropriate which could also include the Contractor Site Manager. The Social Specialist should complete this step within seven (7) working days from date of submission of the grievance.
696. Contractor requires all contractors or subcontractors to implement this grievance mechanism for their respective employees and will also monitor its implementation to ensure compliance

GRM on Gender-Based Violence Grievances

697. Violence Against Women and Girls (VAWG): defined violence against women and

girls as any act of gender-based violence that results in, or is likely to result in, physical, sexual or mental harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life
698. Gender-based Violence (GBV) is an umbrella term for any harmful act that is perpetrated against a person's will and that is based on socially ascribed (i.e. gender) differences between males and females. It includes acts that inflict physical, sexual or mental harm or suffering, threats of such acts, coercion, and other deprivations of liberty. These acts can occur in public or in private. Women and girls are disproportionately affected by GBV across the globe.
699. Sexual Harassment (SH) is unwelcome sexual advances, requests for sexual favors, and other unwanted verbal or physical conduct of a sexual nature. SH differs from Sexual Exploitation and Abuse (SEA) in that it occurs between personnel/staff working on the project, and not between staff and project beneficiaries or communities. Both women and men can experience SH.
700. For the above complaints, there are risks of stigmatization, rejection and reprisals against survivors. This creates and reinforces a culture of silence so survivors may be reticent to approach the project directly. Therefore, the following steps should be ensured for any grievances related to the above.
701. The Contractors Social Specialist will receive appropriate training from an authorized GBV Service Provider on how to collect GBV cases confidentially and empathetically (with no judgement). It is essential to respond appropriately to a survivor's complaint by respecting the survivor's choices. This means that the survivor's rights, needs and wishes are prioritized in every decision related to the incident. The survivor who has the courage to come forward must always be treated with dignity and respect. Every effort should be made to protect the safety and wellbeing of the survivor and any action should always be taken with the survivor's informed consent. These steps serve to minimize the potential for re-traumatization and further violence against the survivor.
702. Confidentiality is essential throughout the process. Otherwise, the survivor risks retaliation and a loss of security.
703. No identifiable information on the survivor should be stored including in particular the worker grievance log sheet. In addition, if a grievance is submitted through a grievance form it will be kept confidential.
704. Should the grievance be received by the Social Specialist through a grievance form, telephone, email or other, the Social Specialist should not ask for, or record, information on more than three aspects related to the incident and which include the following:
705. -Nature of the complaint (what the complainant says in her/his own words without direct questioning)
706. -If, to the best of their knowledge, the perpetrator was associated with the project; and,
707. -If possible, the age and sex of the survivor.
708. The Social Specialist should assist the survivor by referring them to the special authority for support immediately after receiving a complaint directly from a survivor. It is up to the survivor, and only the survivor, whether to take up the referral.
709. Survivors may need access to police, justice, health, and psychosocial, safe shelter and livelihood services to begin healing from their experience of violence.
710. The Social Specialist will immediately notify the Contractor Site Manager, PIU Manager, (if the consent of the survivor is obtained). The survivor must give consent to data sharing and know what data will be shared, with whom and for what purposes.

711. The GRC will meet immediately to agree on a plan for resolution as well as the appropriate remedy for the perpetrator in accordance with the below. Note: The survivor must give the service provider representative consent to participate in the resolution mechanism on her/his behalf.
712. All entities involved in case resolution, need to understand their legal obligations when it comes to reporting cases to the police. Reporting should be done in accordance with the law, especially in cases that require mandatory reporting of certain types of incidents, such as sexual abuse of a minor. When there is no legal obligation to report the case according to the local law, survivors hold the decision of whether to report cases for resolution and other service providers and reporting of a case to anyone can only be made with the consent of the survivor.
713. If the survivor does not wish to place an official complaint through the grievance mechanism, the complaint is considered closed.
714. If the alleged perpetrator is an employee of the Contractor or subcontractor, to protect the safety of the survivor, and the workplace in general, the worker, in consultation with the survivor—and with the support of the GBV Services Provider—should assess the risk of ongoing abuse to the survivor. Reasonable adjustments should be made to the alleged perpetrator's work schedule and work environment—preferably by moving the perpetrator rather than the survivor—as deemed necessary.

AIIB's Project-affected People's Mechanism

715. AIIB has project-affected people's mechanism. 43Two or more project affected people, who believe, they have been or are likely to be adversely affected by AIIB's project activities, and their concerns cannot be addressed satisfactorily through project-level GRM or AIIB management processes,may file a complaint for an independent and impartial review by AIIB's Project-affected People's Mechanism (PPM).
716. Refer for details about the process, time limits of filing complaint and types of complaints eligiblefor the PPM to the "Rules of procedure of the project-affected people's mechanism issued by the managing director, complaints-resolution, evaluation and integrity unit (CEIU) June 13, 2019.44

717. Below is summary: The complaint may be sent to the PPM by mail, email, fax or hand delivered to PPM. The PPM can be contacted through a dedicated PPM website, via the AIIB homepage https://www.aiib.org or by contact information below:
Managing director, complaints-resolution, evaluation, and integrity

unit,Asian Infrastructure Investment Bank (AIIB)

Tower A, Asia Financial Center, No.1 Tianchen East Road, Chaoyang District, Beijing 100101Tel: +86-10-8358-0187
Fax: +86-108358-0000
Email: ppm@aiib.org

Time limits for filing complaints in general are 24 months from the project closing date or last disbursement date depending on financial modality.

43 PPM-policy.pdf (aiib.org)

44 https://www.aiib.org/en/policies-strategies/_download/project-affected/PPM-RofP.pdf

718. Complaints/appeals cannot be considered by the PPM, if (i) it does not relate to a project, that hasbeen approved for AIIB funding or for which PSI has been disclosed;(ii) it is anonymous; (iii) it makesaccusations of fraud, corruption or other prohibited methods or is related to procurement; and other situations.

Disclosure and Public Awareness

719. PIU will disclose the GRM on its website for the attention of public. The information given to thepublic should include the contact details of the GRC at the local level and the GRC at the Second levelat the PIU and channels, through which the customers can lodge their grievances, and the list of members of the GRC.
720. Information, regarding the GRM, should be communicated to the affected community at the earliest stage of the project by IA, during public consultations for social / resettlement and environmental impacts assessments, and the project engineering design and safeguard documents preparation. During these activities, information brochures, as well as verbal communication and otherrelevant media can be used.

Monitoring and Reporting

721. •the forms of Successful stakeholder engagement continues throughout the project cycle and requires monitoring, analysis, reporting and disclosure to adapt to changing circumstances and stakeholder information needs.

722. The PIU Social Specialist will make regular changes and additions to the SEP during Project preparation and implementation, prior to the start and completion of construction activities, during construction in order to determine:

- engagement and the means of disclosure with respect to the various stakeholders;
- how often it is necessary to conduct consultations;
- how adequately the incoming appeals and complaints are handled;
- whether the identified stakeholders remain relevant and the extent to which planned activities need to be reduced or expanded.

723. The SEP will also be adjusted if the Project implementation program changes.

Reporting of complaints and appeals

724. The PIU ESl Specialist will be responsible for preparing the following reports:

- monthly reports on complaints received to the PIU during the construction stage;
- semi-annual reports on complaints received to the PIU during the operational stage;

BUDGET

This chapter provides cost estimates for ESMPF implementation (**Table 39**).

Table 39 Cost estimates for ESMPF implementation

Item	Unit	Per Unit	Number of Units	Total amount
Preperation of Site Spesific ESMPs	Within the Detail Design Contractor's Budget			
Instrumental monitoring				
Baseline Instrumental monitoring(air, water, soil, noise) in every district (20 districts)	Lump sum	10,000.0 USD	20	200,000 USD
Instrumental monitoring (air, water, soil, noise)	Lump sum	5,000.0 USD	36	180,000 USD
Personnel				
PIU(Tashkent)– environmental and social specialist(12 months during 3 years)	month	1,500.0 USD	36	54,000 USD
PIU(Tashkent)–gender specialist(12 months during 3 years)	month	1,500.0 USD	36	54,000 USD
PIU(RoK)–environmental and social specialist(12 months during 3 years)	month	1,500.0 USD	36	54,000 USD
PIU(RoK)–OHS specialist(12 months during 3 years)	month	1,500.0 USD	36	54,000 USD
PIU(Khorezm)– OHS specialist(12 months during 3 years)	Month	1,500.0 USD	36	54,000 USD
PIU(Khorezm)– environmental and social specialist(12 months during 3 years)	month	1,500.0 USD	36	54,000 USD
CSC Environmental Specialist (12 months during 3 years for each) Social safeguards specialist (12 months during 3 years for each) OHS Specialist (12 months during 3 years for each)	month	1,500.0 USD 1,500.0 USD 1,500.0 USD	36 36 36	54,000.0 USD 54,000.0 USD 54,000.0 USD
Subtotal				**866,000.0**
Training				

Training (Table 38)				72,500.0 USD
TOTAL				**938,500.0**

Cost for PIU and CSC safeguards, environmental and socials specialists will be included in relevant packages for PIU performance and CSC budget. Cost for instrumental monitoring will be included in CSC budget as well.

APPENDICES

12.1 Asbestos management plan

A. Scope

This Asbestos Management Plan (AMP) applies to all project facilities to be demolished, repaired, or reconstructed. The AMP is prepared to eliminate exposure to asbestos of project personnel through the identification and removal of asbestos where safe to do so. Where elimination is not possible, exposure is to be minimized so far as is reasonably practicable.

B. Purpose

The AMP establishes policy and procedures to manage asbestos and ensure compliance with applicable Uzbekistan and international regulations.

The AMP was prepared to identify, inspect, control, maintain, and improve the handling of asbestos related issues.

C. Definitions

Aggressive method: Removal or disturbance of building material by sanding, abrading, grinding or other method that breaks, crumbles, or disintegrates intact asbestos-containing material (ACM).

Asbestos: A naturally occurring mineral that is mined throughout the world. The most common types of asbestos (chrysotile, amosite, and crocidolite) are removed from the ground and then processed for automobile brakes, floor tiles, pipe and duct insulation, decorative plasters, spray-on fireproofing, and a wide range of other products.

Asbestos-containing material: Any material containing more than one percent asbestos. The project feasibility study revealed that some of the pipes constituting the water networks are made of asbestos from Russia. The network was laid out during the Soviet Union period and has been in operation for over thirty years. The project design includes replacement of old corroded pipes with new one.

Competent Person: A person who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, and who has the authority to take prompt corrective action to eliminate or mitigate the hazard.

Critical Barrier: Means one or more layers of plastic sealed over all openings into a work area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a work area from migrating to an adjacent area.

Decontamination area: An enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower area, and clean room, which is usedfor the decontamination of workers, materials, and equipment that are contaminated with asbestos.

Demolition: The wrecking or removal of any load supporting structural member and any related razing, removal or stripping of asbestos containing or presumed ACM.

Disturbance: Activities that disrupt ACM or that generate visible debris. It includes but is not limited to cutting, kicking, striking, drilling, sawing, grinding, or otherwise breaking or damaging asbestos or presumed ACM. Suspect asbestos containing materials also include thermal system insulation (TSI), fireproofing insulation, ceiling deck, moisture barriers, roofing, pipes, or siding.

Employee exposure: Exposure to airborne asbestos that would occur if the employee were not using respiratory protective equipment.

Fiber: A particulate form of asbestos, 5 micrometers or longer, with a length-to-diameter ratio of at least 3 to 1.

D. Responsibility

The contractors employed by the project are responsible for the construction sites where their employees may come in contact with ACM during demolition, repair, or reconstruction of the project facilities. Therefore, the contractors must follow the provisions of the project AMP within their project sites.

The contractor should have at least two employees skilled in ACM identification and management.
The recognition of asbestos hazards, the health effects ofexposure, PPE, and emergency procedures trainining will be provided CSC H&S Specilaist, who will also supervise ACM operations.

E. Identification of ACM in the Workplace

Identifying asbestos or ACM is the first step in managing the risk of exposure. The identification of asbestos should be a part of the pre-job planning process. Prior to any work being undertaken that could result in the possible disturbance of ACM, including before demolition or refurbishment, the project manager needs to:

(1) Review the asbestos register, if any.
(2) Arrange for a visual inspection by a competent person if prompted by the Asbestos Register/age of building.
(3) Arrange for testing if suspect ACM is found.

If it is uncertain as to whether material contains asbestos, a sample is to be taken for analysis by a competent person. Where there are inaccessible areas that are likely to contain ACMs, the contractor should assume that asbestos is present.

Asbestos may be identified via the following means:

- Information contained in the Asbestos Register (a copy of the Asbestos Register must be provided to contractors by the water utility before carrying out demolition, repair, reconstruction, or rehabilitation work on the project)
- Building or equipment surveys
- Hazard inspections
- General observation.

F. Immediate Action

Once a suspect ACM is identified,

- The contractor should stop all activities within five meters around the concerned places and evacuate all workers from those area.
- The contractor should ensure signage and barricades have been erected to indicate and delineate the asbestos area.
- The contractor should place warning signs of the presence of asbestos hazard in the area.
- If the site is in an inhabited area, place a security guard at the edge of the site with instructions to keep the people away.
- Notify PCU on the accident and arrange immediate site inspection and information collection.

G. Identification of the ACM hazard scope

The following information is required to fully identify the scope of the ACM hazard:

- The location and condition of the ACM
- The type of ACM, (e.g. asbestos cement sheet)
- Whether the ACM is friable or non-friable
- If there are any inaccessible areas that are likely to contain ACM
- If the nature or location of any work to be carried out is likely to disturb the ACM.

H. Assessment of ACM using Sampling Analysis

Once a suspect ACM is identified, it is required to be analyzed by a laboratory accredited for the test method, or other approved laboratory, to:

(1) Confirm the material contains asbestos.

(2) Determine the level of risk associated with the ACM in situ.

I. Exposure Standards

Exposure standards set out the airborne concentrations of asbestos, which should not damage the health of workers. The exposure standards for asbestos are:

- Amosite (brown asbestos) 0.1 f/mL (Fibres per millilitre of air)
- Crocidolite (blue asbestos) 0.1 f/mL
- Chrysotile (white asbestos) 0.1 f/mL

Any situations or areas which exceed the asbestos exposure standard are to be controlled to eliminate or minimize risk of exposure.

J. Control Measures

Control measures required for work involving exposure to ACMs will include the following:

(1) Risk assessment for the work to be undertaken.

(2) Implementation of appropriate risk controls which may include:

- Ensure barricades have been erected to indicate and delineate the asbestos work area.

- Use a wet method when removing asbestos where practicable.
  Safe work practices may include:
  - Wetting asbestos – wetting agents, such as detergent water to minimize the generation of airborne asbestos fibers.
  - The use of thickened substances, pastes, and gels to cover thesurfaces of asbestos being wired on.
  - Shadow vacuuming.
  - Performing the task in a controlled environment.

- Ensure correct tools, equipment, and personal protective equipment (PPE) isused.
  Manually operated hand tools should be used wherever possible. Where this is not appropriate then low speed battery powered tools should be used in conjunction with suitable dust controls. PPE should be used in combination with other control measures.

- Ensure decontamination facilities are available.

- Contain and label asbestos waste and dispose of it as soon as reasonably practicable.
  Asbestos waste needs to be properly disposed of and tools and workers need to be decontaminated.

- Ensure that PPE and clothing used in asbestos removal work and contaminated with asbestos is handled.
  It is recommended that disposable coveralls are used as protective clothing unless it is not reasonably practicable to do so. When non-disposable protective clothing is used, the contaminated clothing must be laundered ina suitable laundering facility that is equipped to launder asbestos contaminated clothing. Contaminated protective clothing must not be laundered in homes. Any clothing worn under coveralls must be disposed ofor suitably bagged for laundering as asbestos contaminated clothing.

K. Asbestos Removal

Any work that involves the removal of ACM must be carried out only by a skilled and trained asbestos removalists who will:

1. First, locate all visible ACM and spray each lightly but thoroughly with water.
2. Once the ACM is damp, pick up all visible ACM with shovels and place them in a clear plastic bag.
3. If any ACM debris is partially buried in the soil, remove it using a shovel and placeit in the plastic bag.
4. Insert a label inside each plastic bag stating clearly that the contents contain asbestos, are dangerous to human health, and must not be handled.
5. Securely tie the plastic bags into labeled asbestos waste containers (clean metal drums) and seal each drum.
6. Soil with ACM debris must not be used for backfilling but must be shoveled by hand into asbestos waste containers.
7. At the end of the operation, clean all shovels and any other equipment with wet rags and place the rags into plastic disposal bags inside asbestos waste containers.
8. If soil containing ACM debris has been mistakenly used for backfilling, it should besprayed lightly with water and then removed by hand to a depth of 300 mm. Thesoil must be placed directly into asbestos waste containers and not stored temporarily beside the trench. Any ACM uncovered during the hand shoveling must be put in a clear plastic bag with an asbestos warning label. Upon removing soil containing ACM from the trench, it could be refilled with imported clean topsoil free of any visible ACM.

9. The contractor employees will take all necessary precautions to ensure their safety and the safety of others during this process.

L. ACM Disposal

The ACM must be disposed of only at a hazardous-waste site or the city dumpsite with prior safe storage arrangements. The contractor is responsible for ensuring that the disposal site operator collects the sealed asbestos waste containers as soon as possible and stores them undisturbed at the disposal site. At the end of the construction, the contractors must make necessary arrangements for the disposal site operator to bury all ACM containers in a suitable pit of suitable size, covered with a layer of clay at least 250 mm deep.

M. Decontamination of Individuals who Handle ACM

All individuals who handle ACM must adhere to the following decontamination procedure:

1. Thoroughly clean the boots with damp rags after the decontamination process.
2. Peel off the disposable overalls and plastic gloves, ensuring they are inside-out,and place them in a plastic bag along with the rags used to clean the boots.
3. If a disposable respirator is used, put it in a plastic bag, seal it, and dispose of it inan asbestos waste container.
4. All personnel must wash thoroughly before exiting the site.
5. The washing area should be cleaned afterward with damp rags, which should then be placed in plastic bags, as mentioned above.

N. Clearance

Before an area can be re-occupied after asbestos removal, a clearance inspection mustbe performed. Clearance monitoring is a mandatory requirement for all friable asbestos removal works and is recommended for bonded ACM removal works particularly when the bonded ACM is located internally or near sensitive receptors such as air intakes. The complete removal of all ACM must be verified with a written clearance report, which must include details of a satisfactory clearance inspection conducted by the health andsafety engineer. If clearance air monitoring has been conducted, the results of the air monitoring must be included as part of the clearance report. This report must be sharedwith the water utility, PMC, and PCU. PMC and PCU should participate in site clearance inspection.

O. Employee Training

The training objective is to establish proper awareness and understanding of work practices for each contractor's employee who does or may come into contact with ACM or those that are presumed to be ACM.

All contractor's personnel with risk of contact with ACM in performance of their work duties will be trained in the recognition of asbestos hazards, the health effects ofexposure, PPE, and emergency procedures.

The training will include at least the following discussions:

- Types and uses of asbestos
- Hazards associated with asbestos
- Proper cleaning techniques
- Appropriate levels of personal protective equipment
- Proper engineering controls
- Regulatory requirements
- Appropriate handling practices for asbestos, and

P. PPE, Materials, and Equipment

All personnel who handle ACM must wear contractor-provided PPE. When working with asbestos, it is recommended to wear disposable overalls with a hood, boots without laces, new strong rubber gloves, and a respirator.

To safely remove asbestos from a construction site, contractors must make sure to have the following equipment on hand:

- Warning tape, sturdy fence posts, and warning notices to cordon off the area and prevent people from accidentally entering.
- Shovels to scoop up any contaminated materials.
- A water supply and hose fitted with a garden-type spray attachment keep the asbestos wet and prevent it from becoming airborne.
- Water and rags to clean up any spills or debris.
- Sacks of clear, strong polythene that can be tied too close to store any contaminated materials.
- Asbestos waste containers are empty, clean, sealable metal drums labeled as containing asbestos. They will be used to dispose of any asbestos waste safely andsecurely.

12.2 AIIB Environmental and Social Exclusion List

The Bank will not knowingly finance Projects involving the following:

(i) Forced labor[i] or harmful or exploitative forms of child labor;

(ii) 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).

(iii) 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).

(iv) Trans-boundary movements of waste prohibited under international law (Basel Convention).

(v) Production of, or trade in, weapons and munitions, including paramilitary materials.

(vi) Production of, or trade in, alcoholic beverages, excluding beer and wine.

(vii) Production of, or trade in, tobacco.

(viii) Gambling, casinos and equivalent enterprises.

(ix) Production of, trade in, or use of unbonded asbestos fibers.

(x) 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.

(xi) Commercial logging operations or the purchase of logging equipment for use in primary tropical moist forests or old-growth forests.

(xii) Production or trade in wood or other forestry products other than from sustainably managed forests.

(xiii) 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.

12.3 E&S Screening and Categorisation Checklist

According to AIIB's ESP, screening and categorisation of the project should be conducted to determine the nature and level of the required E&S assessment, type of information disclosure and stakeholder engagement for any project/subproject financed.

Both Uzbek legislation and AIIB ESP require screening the project for the expected E&S impacts and assigning it to one of the categories. The AIIB ESP has Categories A, B, C, and FI (see the box), and the Uzbek legislation has categories I to IV (Regulation No. 541 "On further improvement of environmental assessment procedure").

The categorisation will take into consideration the nature, location, sensitivity and scale of the Project, and will be commensurate with the significance of its potential E&S risks and impacts. The Project will then be categorised against the categories set out by AIIB ESP.

AIIB ESP, Screening and Categorisation:

Category A: A Project is categorised 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. An environmental and social impact assessment is required along with an ESMP or ESMPF.

Category B: A Project is categorised 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. An initial environmental examination is required.

Category C: A proposed project is classified as category C if it is likely to have minimal or no adverse environmental impacts. No environmental assessment is required although environmental implications need to be reviewed.

Table 1: Screening Checklist

Screening	Yes	No	N/A	Comments
Will the activities related to construction, operation or liquidation of the project cause significant physical or ambient changes to the surrounding environment (topography, land use, changes in waterbodies, air quality, etc., due to backfill, soil comp, emissions)?				
Will the project require resettlement of individuals or communities, acquisition of land or restriction on the useof or access to land?				
Is the project located in an area subject to natural disasters: earthquakes, landslides, erosion, flooding or extreme or adverse climatic conditions (e.g. temperature inversions, fogs, severe winds, storms)?				
Are there sensitive receptors in the project area (forexample unprotected underground water, waterbodies, wildlife, flora, residential areas nearby, protectedareas)				
Will construction or operation of the project use local resources such as land, water, materials, or energy, especially any resources which are non-renewable or in limited supply? (lack of space in congested areas)				
Will the project alter the actual land surface conditions (e.g. compaction of soil.) which might reduce the drainage capacity and increase the risk of flooding?				
Is the past use of the designated area of the project known? Would it impact (from an environmental point ofview) the actual and future use of the site?				
Will the future possible use of the surrounding areas havean environmental impact on the site (if known)?				
Will the project produce solid and liquid waste during construction, operation or liquidation?				
Will the project release air emissions (e.g. are they toxic or polluting substances and significant greenhouse gas emissions)?				
Will the project involve use, storage, transport, handling or production of substances or materials which could beharmful to human health or the environment (e.g. chemicals, oils, pesticides, etc.)?				

Screening	Yes	No	N/A	Comments
Will the project increase road traffic in the area or change actual traffic movements (e.g. closing or opening of roads, resulting in heavy equipment movements)?				
Is there a possibility that the project will cause risks of contamination of land or water through pollutant releases onto sensitive receptors (e.g. ground or surface waters, groundwater, coastal waters or the sea)?				
Will there be any risk of accidents during construction or operation of the project which could affect human health or the environment?				
Will the project cause any social changes, for example, in demography, resettlements, traditional lifestyles, employment or through physical or noise disturbance?				
Will the project be located in densely populated areas where it could affect the local population?				
Is the project located in an area sensitive in terms of biodiversity (e.g. wetlands, watercourses or other waterbodies, the coastal zone, mountains, forests or woodlands)?				
Is the project located in an area sensitive in terms of flora and fauna (for breeding, nesting, foraging, and resting, overwintering, migration)?				
Are there any areas around the location which are occupied by sensitive land uses (e.g. hospitals, schools, community facilities) which could be affected by the project?				
Are there any areas or features of high landscape or scenic value on or around the location which could be affected by the project?				
Are there any areas or features of archaeological, historic or cultural or religious significance on or around the location which could be affected by the project?				

The screening of Project activities should be conducted in close coordination with the project proponents, CSC and detail design contractors.

Table 2: Sample Social Screening Checklist

Involuntary Resettlement Impacts Questions	**Yes/No**	**Not Known**	**Details/Notes**
Will the intervention include construction work?			
Does the intervention include upgrading or reconsctruction of existing physical facilities?			
Is the intervention likely to cause any permanent damage to or loss of housing, other assets, resource use?			
Is the site chosen for this work free from encumbrances and is in possession of the government/community land?			
Is this sub project intervention requiring private land acquisitions?			
If the site is privately owned, can this land be purchased through negotiated settlement?			
If the land parcel has to be acquired, is the actual plot size and ownership status known?			
Are these landowners willing to voluntarily donate the required land for this sub-project?			
Whether the affected landowners likely to lose more than 20% of their land/structure area because of donation?			
Is land for material mobilisation or transport for the civil work available within the existing plot (Right of Way)?			
Are there any non-titled people who are living/doing business on the proposed site/project locations that are used for civil work? Is any temporary impact likely?			
Is there any possibility to move out, close of business/commercial/livelihood activities of persons during constructions?			
Is there any physical displacement of persons due to constructions? Does this Project involve resettlement of anypersons? If yes, give details.			
Will there be loss of /damage to agricultural lands, standing crops, trees?			
Will there be loss of incomes and livelihoods?			
Will people permanently or temporarily lose access to facilities, services, or natural resources?			
Are there any previous land acquisitions happened, and the identified land has been already acquired?			
Are there any land acquisition happening in frame of this Project but without financing of the Asian Infrastructure Investment Bank?			

12.4 Content of ESMP

(1) Executive Summary. An executive summary is a brief overview of the ESMP that should be easily understood by the public. It should cover all aspects of the report in a clear and concise manner. The summary should describe both the process and the study's output. In other words, it should explain what was done and what resulted from it.

(2) Introduction. This section will introduce the ESMP by providing information about its background, objectives, principles, process, and methodology. It will also specify the subproject proponents and study team and offers other relevant information. Additionally, this section should describe the ESMP report structure tohelp facilitate its use. A subproject map is also provided in this chapter.

(3) Legal and Administrative Framework. This chapter aims to provide an overview ofthe laws, regulations, and standards related to environmental and social assessment and management, including resettlement issues, at national and international levels. It will identify the institutions responsible for enforcing these laws and their roles in project implementation. The chapter will pay particular attention to local institutions and structures at project sites to ensure the inclusiveness and participation of all affected people, groups, and communities. Furthermore, this chapter will discuss the AIIB's ESP and ESSs and examine how theyapply to the subproject. It will also compare the AIIB standards with the national legislation in Uzbekistan, highlighting any gaps between the two sources of requirements. Finally, the chapter will explain how the ESMP bridges the gaps between the AIIB standards and the national legislation. All the information will be summarized in a tabular form for better understanding.

(4) Description of Subproject. This chapter aims to provide a brief overview of the subproject, which is an objective of ESMP. It will include a summary of the background of the overall project and a specific subproject. The components of the subproject will be discussed in terms of the permanent and temporary facilities and associated civil works. The chapter will also cover workforce requirements, labor camps, machinery, equipment, plant, and building materials. A description of the construction methodology will be finalized by specifying the subproject implementation period and overall cost. Finally, the chapter will identify the specific activities to be implemented during the design, construction, operation, and maintenance phases.

(5) Environmental and Social Baseline Assessment. This chapter will discuss the findingsof the literature review, environmental instrument monitoring, field surveys, social and economic surveys, and data collection that were conducted at various project sites. The description will cover the physical, biological, and

socio- economic environment of the subproject area. Additionally, this chapter will include an estimated number of people and types that are likely to be affected or displaced by the project activities. The data and description provided will be relevant to the subproject location, design, operation, and impact assessment decisions. Furthermore, we will also describe the trends in the area's key environmental parameters.

(6) Impact Assessment and Mitigation Measures. This chapter will begin by presentingthe scoping process and its outcomes, which were conducted at the start of the study. It will identify the significant impacts and the criteria used to determine this.The methodology and outcomes of the detailed impact assessment during the assignment will be described.

The chapter will then present the impact assessment during the design, construction, and operation phases on the physical, biological, and socioeconomic environment and the climate. The analysis will cover the issues of the proposed Subproject and associated onsite and off-site facilities, including borrow pits, labor camps (if any), transportation, and storage of construction equipment and materials. All generic and site-specific impacts will be assessed.

Appropriate impact avoidance, minimization, mitigation, and compensatory measures will be detailed for each impact. The potential impacts, significance, and associated mitigation measures will also be presented in a tabular form.

(7) Environmental and Social Management Plan. It will cover the following key aspects:

- Implementation arrangements for the project covering responsibilities for overall project management, project coordination at local level and responsibilities for environmental and social management, implementation, and monitoring.
- A mitigation plan that outlines measures to mitigate the various impacts of each subproject activity. It will also assign responsibilities for implementation, monitoring, and supervision, along with monitoring indicators.
- Internal and external monitoring arrangements with roles and responsibilities, monitoring methodology, frequency, and documentation requirements. There will be two types of monitoring: compliance monitoring and effects monitoring.
- Capacity building requirements specifying certain activities, participants, implementors, and implementation period.
- ESMP implementation cost.
- Documentation and reporting.

(8) Stakeholder Engagement. This section of the ESMP should provide details about the objective, process, and outcome of stakeholder consultations carried out during the ESMP preparation and other associated activities, such as RP preparation. It is important to document the feedback and comments of all

stakeholders, including project-affected people, representatives of vulnerable groups, and representatives of institutional stakeholders such as government officials, NGOs, line department officers, and representatives of public health service and territorial departments of environmental regulators. This section shouldalso explain how the feedback received from stakeholders has been or will be addressed. The record of consultation and participation should be enclosed in theESMP. Additionally, this section should include a stakeholder engagement plan that outlines consultations to be conducted with various stakeholders during subsequent stages of subproject implementation (i.e., construction and O&M).

12.5 CODE OF CONDUCT FOR CONTRACTOR'S PERSONNEL

We are the Contractor, [*enter name of Contractor*]. We have signed a contract with [*enter name of Customer*] for [*enter description of the Works*]. These Works will be carried out at [*enter the Site and other locations where the Works will be carried out*]. Our contract requires us to implement measures to address environmental and social risks related to the Works, including the risks of sexual exploitation, sexual abuse and sexual harassment.

This Code of Conduct is part of our measures to deal with environmental and social risks related to the Works.

> **Note**:
>
> **The minimum content of the Code of Conduct form as set out by the Employer shall not be substantially modified**. However, the Contractor may add requirements as appropriate, including to take into account Contract-specific issues/risks.

It applies to all our staff, labors and other employees at the Works Site or other places where the Works are being carried out. It also applies to the personnel of each subcontractor and any other personnel assisting us in the execution of the Works. All such persons are referred to as "**Contractor's Personnel"** and are subject to this Code of Conduct.

This Code of Conduct identifies the behavior that we require from all Contractor's Personnel.

Our workplace is an environment where unsafe, offensive, abusive or violent behavior will not be tolerated and where all persons should feel comfortable raising issues or concerns without fear of retaliation.

REQUIRED CONDUCT

Contractor's Personnel shall:

1. carry out his/her duties competently and diligently;
2. comply with this Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and well-being of other Contractor's Personnel and any other person;
3. maintain a safe working environment including by:
    a. ensuring that workplaces, machinery, equipment and processes under each person's control are safe and without risk to health;
    b. wearing required personal protective equipment;
    c. using appropriate measures relating to chemical, physical and biological substances and agents; and
    d. following applicable emergency operating procedures.
4. report work situations that he/she believes are not safe or healthy and remove himself/herself from a work situation which he/she reasonably believes presents an imminent and serious danger to his/her life or health;
5. treat other people with respect, and not discriminate against specific groups such as women, people with disabilities, migrant workers or children;

6. not engage in Sexual Harassment, which means unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature with other Contractor's or Customer's Personnel;
7. not engage in Sexual Exploitation, which means any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another;
8. not engage in Sexual Abuse, which means the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions;
9. not engage in any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage;
10. complete relevant training courses that will be provided related to the environmental and social aspects of the Contract, including on health and safety matters, Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH);
11. report violations of this Code of Conduct; and
12. not retaliate against any person who reports violations of this Code of Conduct, whether to us or the Customer, or who makes use of the grievance mechanism for Contractor's Personnel or the project's Grievance Redress Mechanism.

RAISING CONCERNS

If any person observes behavior that he/she believes may represent a violation of this Code of Conduct, or that otherwise concerns him/her, he/she should raise the issue promptly. This can be done in either of the following ways:

1. Contact [*enter name of the Contractor's Social Expert with relevant experience in handling sexual exploitation, sexual abuse and sexual harassment cases, or if such person is not required under the Contract, another individual designated by the Contractor to handle these matters*] in writing at this address [ ] or by telephone at [ ] or in person at [ ]; or
2. Call [ ] to reach the Contractor's hotline *(if any)* and leave a message.

The person's identity will be kept confidential, unless reporting of allegations is mandated by the country law. Anonymous complaints or allegations may also be submitted and will be given all due and appropriate consideration. We take seriously all reports of possible misconduct and will investigate and take appropriate action. We will provide warm referrals to service providers that may help support the person who experienced the alleged incident, as appropriate.

There will be no retaliation against any person who raises a concern in good faith about any behavior prohibited by this Code of Conduct. Such retaliation would be a violation of this Code of Conduct.

CONSEQUENCES OF VIOLATING THE CODE OF CONDUCT

Any violation of this Code of Conduct by Contractor's Personnel may result in serious consequences, up to and including termination and possible referral to legal authorities.

FOR CONTRACTOR'S PERSONNEL:

I have received a copy of this Code of Conduct written in a language that I comprehend. I understand that if I have any questions about this Code of Conduct, I can contact [*enter name of Contractor's contact person(s) with relevant experience*] requesting an explanation.

Name of Contractor's Personnel: [insert name]

Signature: _____

Date: (day month year): _____

Countersignature of authorized representative of the Contractor:

Signature: _____

Date: (day month year): _____

ATTACHMENT 1: Behaviors constituting Sexual Exploitation and Abuse (SEA) and behaviors and behaviors constituting Sexual Harassment (SH)

ATTACHMENT 1 TO THE CODE OF CONDUCT FORM

BEHAVIORS CONSTITUTING SEXUAL EXPLOITATION AND ABUSE (SEA) AND BEHAVIORS CONSTITUTING SEXUAL HARASSMENT (SH)

The following non-exhaustive list is intended to illustrate types of prohibited behaviors

(1) **Examples of sexual exploitation and abuse** include, but are not limited to:

- A Contractor's Personnel tells a member of the community that he/she can get them jobs related to the work site (e.g. cooking and cleaning) in exchange for sex.
- A Contractor's Personnel that is connecting electricity input to households says that he can connect women headed households to the grid in exchange for sex.
- A Contractor's Personnel rapes, or otherwise sexually assaults a member of the community.
- A Contractor's Personnel denies a person access to the Site unless he/she performs a sexual favor.
- A Contractor's Personnel tells a person applying for employment under the Contract that he/she will only hire him/her if he/she has sex with him/her.

(2) **Examples of sexual harassment in a work context**

- Contractor's Personnel comment on the appearance of another Contractor's Personnel (either positive or negative) and sexual desirability.
- When a Contractor's Personnel complains about comments made by another Contractor's Personnel on his/her appearance, the other Contractor's Personnel comment that he/she is "asking for it" because of how he/she dresses.
- Unwelcome touching of a Contractor's or Customer's Personnel by another Contractor's Personnel.

A Contractor's Personnel tells another Contractor's Personnel that he/she will get him/her a salary raise, or promotion if he/she sends him/her naked photographs of himself/herself

12.6 Traffic management plan (template)

Project Description

This chapter aims to provide a brief overview of the subproject, which is an objective of Traffic Management Plan. It will include a summary of the background of the overall project and a specific subproject. The components of the subproject will be discussed in terms of the permanent and temporary facilities and associated civil works. The chapter will also cover workforce requirements, labor camps,machinery, equipment and building materials.

Objective

This document is a project specific traffic management plan to be implemented by the Contractor. This document is considered part of the ESMP that will be implemented during the construction phase of the project. The objective and scope of this plan includes the following:

- Identify project related traffic requirements to include but not limited to delivery of materials, equipment, machinery, transportation of workers and other
- Identification of onsite and offsite traffic management and procedural requirements to ensure a safe environment for all road users, protection of activities, workers, visitors and the general public from traffic and transportation hazards
- Identify training requirements related to the plan
- Identify monitoring and reporting requirements related to the plan
- Identify roles and responsibilities related to the plan

This document is considered a live document that will be regularly updated to accommodate changing circumstances.

Project Traffic Requirements

This section provides a summary of the Project related traffic activities that will be undertaken during the construction of the project. This includes the transportation of material, transportation of project workers, service works, and other visitors, each of which is discussed in further details below.

Delivery of Materials, Equipment and Machinery

Site Machinery

This will mainly include list of machinery, types, frequency of using, routes end etc.

Construction Materials

This will mainly include transportation of construction materials to the project site (types, frequency and routes).

Transport of Project Workers

This will mainly include transportation of project workers to the project site (types, frequency and routes).

Services

This will mainly include transportation of service requirements to the project site to include potable and non-potable water tanks as well as waste collection trucks (solid waste, wastewater and hazardous waste).

Other Visitors

Non-employee visitors to the site may include site inspectors, lenders or their representatives, and will not generate a significant amount of additional traffic to the site.

Type of Vehicles

Taking the above into account, the type of vehicles that will be required for the execution of the project.

Traffic Management Procedures

This section identifies in detail the traffic management procedures to be implemented to ensure safe driving and vehicle management practices both onsite and offsite to protect workers and members of the public during the construction phase of the project.

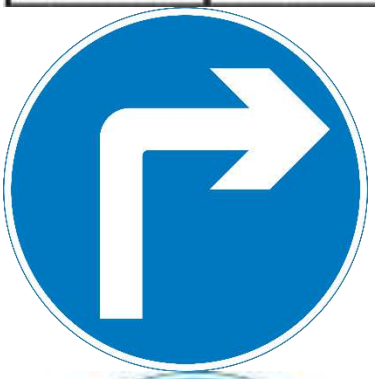
Signage

Signalization is an important part of the preventive measures to avoid traffic accidents while driving onsite. It must be ensured that signage associated with the project is conspicuously placed at appropriate locations along all internal roads, are in good conditions and secured against being blown over or out of position. Onsite assessment will be regularly conducted to evaluate any change needs. At a minimum, the following traffic signs will be maintained onsite.

Table1: Signage Requirements Onsite

Sign	Location	Language	Dimension
	- 500 m from the entrance/exit of the site	Project Languages	85X85 cm
	- 500 m from the entrance/exit of the site	Project Languages	85X85 cm

	- 500 m from the entrance/exit of the site	Project Languages	85X85 cm
	- 500 m from the entrance/ exit of the site	Not applicable	65x65 cm
	- At each exit from the site - At any hidden junctions	Project Languages	60x60 cm
	Speed limit signs will be installed every 500m at traffic currents of project area and at access road. Speed limit signs will be installed in accordance with set speed limits identified earlier.	Not applicable	65X85 cm

	Every 500 meters on both traffic currents of project area access roads where heavy traffic or hazardous road conditions exist.	Not applicable	85 cm
	30 meters ahead of road hazard on both directions, repeated every 500 meters	Project Languages	60x60 cm
	30 meters ahead of excavation on all directions,	Project Languages	65X85 cm
	30 meters ahead of road corner on both directions	Not applicable	85 cm

	30 meters ahead of pedestrian prohibited access road entrance on both directions	Not applicable	85 cm
	30 meters ahead of pedestrian allowed access road entrance on both directions	Not applicable	85 cm
	30 meters ahead of danger/ no go zones on both directions	Project Languages	65X85 cm
	At vehicle parking area entrance	Project Languages	65X85 cm excluding wording

	At equipment and machinery parking area entrance	Project Languages	65X85 cm excluding wording

Traffic Accident

For any traffic accident which may occur the following will be implemented for offsite and onsite accidents.

a. Offsite Traffic Accidents

- Do not move the vehicle or alter the accident scene
- Contract traffic police and report the accident
- If there are injured persons or uncontrollable fire contact emergency services (ambulance services, fire brigade, etc.)
- Report accident to direct supervisor and ultimately to Contractor E&S Manager

b. Onsite Traffic Accidents

- Do not move the vehicle or alter the accident scene
- Report accident to direct supervisor and ultimately to Contractor E&S Manager
- In the case of an emergency (fire or injury) implement measures as indicated in **Emergency Preparedness and Response Plan**. In the case of fire contact the fire extinguisher emergency responders of the team, and in case of injury contact the first aid emergency responder of the team.

Grievance Mechanism

Any submitted grievances related to the traffic management will be handled in accordance with project GRM.

Training Requirements

This section provides *an overview* of the key training requirements that are considered applicable for this plan.

Workers

- As part of the HSE induction training that will be implemented for all workers (Contractor , subcontractors, security personnel, etc.), the Contractor E&S Manager will include a module on traffic and transportation management. Including defensive driving and driving under adverse weather conditions.

Drivers

All designated drivers engaged on the project by will undergo a specialized training on driving that will focus on the following key aspects:

- Traffic signs
- Speed limits
- Road safety
- Driver's instructions
- Defensive driving
- Driving under adverse weather conditions

Haulage Company Drivers

As discussed earlier, a third-party contractor(s) will be engaged to undertake specific transportation requirements for the project. The third-party contractor(s) will be required to provide training to drivers on safe driving practice, including the relevant requirements and rules included within the plan and the "Drivers Instructions".**Error! Reference source not found.**

Such a requirement will be included in contractual agreements and the haulage company will be required to provide the following before commencement of any transportation activities:

- Training certificates
- Training material
- Attendance sheet
- Signed "Drivers Instructions" by each driver.

Crane and Telehandler Operators

Inspections shall be undertaken for the operators of the cranes and telehandlers through a third-party specialized company. Certification for the operator to operate the machinery shall be provided by the third-party prior to any operations onsite. Such certifications shall be renewed as required by the third-party inspectors.

Monitoring And Reporting Requirements

- Monitoring and reporting requirements will be undertaken (daily site walkovers, weekly site inspections, audits, weekly reports and monthly reports) as discussed in detail within which will ensure that the above procedure requirements are fully implemented.
- KPIs are established to measure and monitor the effectiveness of implementation of this plan. The KPIs that shall be implemented are summarized in the table below and shall be included within the reporting requirements.

No.	KPI	Measurement Action	Frequency	Goal
1	Number vehicle inspections factory / port	Submission of vehicle register	Monthly	N/A
2	% of drivers specific training	Submission of training plan	Monthly	100%
3	% of drivers signing driver CoC	Submission of worker database	Monthly	100%
4	% of vehicles displaying GM sign	Submission of vehicle register	Monthly	100%
5	Number of traffic related accidents onsite and offsite	Submission of incident report and/or Non-Compliance Report (NCR)	Weekly	ZERO
6	Number of community or worker grievances submitted related to traffic management	Submission of grievance log sheet	Weekly	ZERO
7	Number of vehicle inspections undertaken	Submission of monthly inspection reports	Monthly	N/A
8	Outcome (% rejected), average number gaps per inspection, closure evidence	Submission of monthly inspection reports	Monthly	N/A
9	Number of abnormal load permits obtained	Submission of permits	Monthly	For ALL Abnormal loads
10	Number of traffic signage installed	Photo documentation evidence	Monthly	N/A
11	Number of traffic violations issued	Submission of incident report and/or Non-Compliance Report (NCR)	Monthly	ZERO
12	Number of incidents and/or non-compliances in relation to this plan	Submission of incident report and/or Non-Compliance Report (NCR)	Weekly	ZERO

Roles and Responsibilities

This section identifies the roles and responsibilities for the key personnel involved in the implementation of this plan.

Contractor Site Manager

- Overall responsibility over the traffic on the construction site area including office and camp area.
- Ensure resources required are available for the implementation of this plan.
- Oversee the implementation of this plan.
- Ensuring site traffic management is appropriately planned, organized and supervised.

Contractor E&S Manager

- Develops and revises the Traffic Management Plan and update the traffic management plan monthly during the construction phase.
- Administer and monitor the day-to-day operation of the vehicle movement and instructs site security and construction team regarding Traffic Management Plan issues.
- Responsible to disseminate the updated roadway plans on need basis
- Responsible for the overall management of pedestrian walkways
- Report and investigate all traffic incident and ensure compliance with HSE reporting plan
- Responsible to carryout pre-entry inspection and recommend to company for issuing gate pass, if satisfied
- Provide Company with the finalized delivery timetable for transportation requirements for approval for each day with as much prior notice as possible and not later than 3 days in advance.
- Undertake haulage suppliers' recruitment procedure.
- Retain onsite all documentation required related to this plan to include but not limited to signed Driver Instructions, training material/signed attendance sheets/ and health reports of drivers from haulage companies, copies of drivers licenses and vehicles licenses and certificates, and other as indicted.

Contractor HSE Officers

- Support in the implementation of the Traffic Management Plan
- Inspection of all road systems like signages, parking, barriers etc. are in right place and adequate
- Support in the investigation of all traffic incident and ensure compliance with HSE reporting plan
- Support Contractor E&S Manager as applicable

Driver and Vehicle Operators

- Comply with and follow requirements as per the plan and training received
- Follow flagman's signal whenever entering or exiting the haul road from or to the highway
- Report any incident or activity relating to the traffic management which is reasonably foreseeable to endanger their safety or the others safety
- Ensure Company Driving Permit and driving license are valid
- Not to leave construction vehicle or personal vehicle while engine in running condition
- Ensure construction vehicle and personal vehicle in good condition and carryout daily check before use
- Sign and understand the "Drivers Instructions"
- Ensure that the monthly inspection is undertaken for the vehicle as per the vehicle inspection checklist

Banksmen/Flagmen

Banksmen and flagmen will ensure clear and precise commands are given to all machine operators and drivers. Banksmen and flagmen will be readily identifiable to all during project execution by wearing a different colored helmet and high visibility vest to other operatives. In addition, they will:

- Check all assigned tools (flags, signals, reflective vests etc.) to make the job
- To ensure speed limit at site are enforced and report immediately any deviation observed
- Regularize the vehicle and pedestrian movement according is instructed
- Guidance to vehicle driver and pedestrian.
- Be medically fit for the purpose (eyesight, hearing and reflexes etc.)
- Have an aptitude for judging distance, height and clearance and a sensible knowledge of the safe working with the machines
- Be agile and strong enough to handle the gear and identify defects
- Be trained in the general techniques of operations
- Be capable of directing the safe movement and to maintain the safety of all personnel
- Be aware of the environmental conditions during the operation (obstructions, people, excavations, etc.)
- Be aware of the other people in the vicinity when maneuvering/ reversing and warn the other people by a whistle.

Haulage Company (third Party)

- Provide training to drivers on safe driving practice, including the relevant requirements and rules relating to this plan and the “Drivers Instructions”**.** Training certificates, training material, and signed attendance sheets shall be provided to Contractor before commencement of any construction activities.
- Ensure all drivers sign and understand the “Drivers Instructions” and provide signed copies to Contractor
- Ensure all drivers have valid driving licenses at all times and appropriate vehicle licenses and certificates. Provide copies to Contractor
- Ensure all drivers undergo appropriate health checks and provide copies of reports to Contractor
- Install vehicle tracking solutions on all trucks as required by the Plan
- Report to Contractor any incidents of non-compliance with driving regulations identified within their operations, supplying the name of the driver and details of the offence
- Provide Contractor on any change throughout transportation such as delays on delivery routes, requirements for detours, etc.
- Notify Contractor of vehicles departing ports, with relevant details for their tracking
- Comply with requirements of this Plan

12.7 OCCUPATONAL HEATH AND SAFETY PLAN (TAMPLATE)

Project Description

This chapter aims to provide a brief overview of the subproject, which is an objective of Occupational Health and Safety Management Plan. It will include a summary of the background of the overall project and a specific subproject. The components of the subproject will be discussed in terms of the permanent and temporary facilities and associated civil works.

Objective

This document is a project specific occupational health and safety management plan which establishes a set of guidelines and procedures to be undertaken in order to protect and promote workers health and safety during the construction phase of the project.

The key objectives of this plan include the following in particular:

- Prevent all occupational incidents to the greatest extent possible for all workers
- Zero fatal accidents, injuries and lost time accidents
- Zero occupational disease
- Zero major fire, serious traffic, machinery, and property damage incident
- Providing a place of work that is safe for workers and communities
- Full compliance with legal and contractual requirements related to occupational health and safety
- Maintain safe working areas and good housekeeping.

These objectives are to be achieved through:

- Establishing a high level of awareness and discipline;
- Identifying areas of high risk and carry out risk assessments;
- Ensuring that personnel are fully instructed with respect to the requirements of the method statements, permit to work certificates to which their work is subject;
- Promoting a proactive approach to Health, Safety, and Environment; and
- Monitoring the effectiveness of the management of Health, Safety, and Environment by conducting regular scheduled audits/inspections and tracking incidents.

This document is to be implemented by the Contractor. This document is considered part of the ESMS that will be implemented during the construction phase of the Project.

This document is considered a live document that will be regularly updated to accommodate changing circumstances.

Risk Assessment and Job Safety Planning

This section presents the risk assessment and job safety planning procedure to be implemented throughout the construction phase of the project.

Implementation Requirements

The requirements of the procedure below to include: (i) risk assessment and risk register, (ii) method statements, and (iii) Job Safety Analysis (JSA) that will be prepared by each subcontractor ‘s project manager as applicable in coordination with his/her HSE Officers for each phase or series of related activities. These requirements will be submitted to the Contractor E&S Manager for review and approval before commencement of any activity onsite as related to the subcontractor.

Should the subcontractor not prepare the above requirements for any reason, those shall be prepared by the Contractor E&S Manager and then enforced on the subcontractor accordingly.

The Contractor E&S Manger will in turn submit the requirements documents (risk assessment and register, method statements and JSA) to the Company E&S Manager for review and approval, prior to a preparatory meeting for discussion.

Risk Assessment

Risk Assessment is a thorough assessment of a job site task for the purpose of identifying what actual and potential hazards exist, assessing the risks arising from the hazards and determining necessary control measures to eliminate or reduce them. It involves looking at what is, and what could go wrong given the work to be undertaken, equipment to be used, processes involved and the environment where it is taking place. It is therefore an important tool to plan safety into all works to be carried out during the project.

All hazards and associated risks will be assessed and continuously managed through a process involving the following components which are discussed in further details below.

- Step 1: Identification of potential hazards and associated risks
- Step 2: Evaluation of risk acceptability (risk scoring)
- Step 3: Elimination or mitigation of the hazards

The above process shall be fully documented into a risk register.The risk register is a document that summarizes and defines the possible risks resulting from a particular construction activity, or construction related activities. The risk register shall identify:

- Identification and description of potential hazards and associated risks
- A scoring for each risk
- Actions and controls that currently exist to mitigate risks
- Responsible entity for implementation

Identification of Hazards

Potential hazards and associated risks can be identified by breaking down the task(s) into a sequence of steps and based on that identify the potential hazards and associated risks. This shall be undertaken based on the following:

- Previous experience of subcontractor in completing similar task(s) and the subcontractor management team (project manager, HSE Officers, etc.)
- Understanding of project location, project activities, layout arrangement, used tools, equipment and/or machineries, environmental conditions, chemical properties of the fluids or substances being handled, and taking into account the established inspection/maintenance procedures.
- Identifying key changes to work processes
- Identifying any introductions of or modification to products, materials or work processes
- Understanding any works or activities not undertaken before

It is important to note that due to the day-to-day changes in the workplace, different people moving around, moving equipment and materials, unexpected hazards can occur. As such the processes used shall allow for the identification, assessment and control of hazards through scheduled activities and also importantly for unplanned events or situations.

Evaluation of a Risk (Risk Scoring)

Risk scoring is a combination of the likelihood (probability) of a risk and consequences of an event (severity). Probability is the probability or frequency of an event occurring, while severity is the possible outcome or impact of the event. The following scale is used to determine the appropriate rating.

Ratio	Probability (P)	Severity (S)
1	Highly improbable	Slight injury treatable with first aid kit (no hours lost)
2	Improbable	Minor injury requiring treatment at healthcare centre, (up to three days off work)
3	Possible	Injury or illness requiring attention at a healthcare centre and leading to more than three days off work.
4	Probable	Major injury causing long-term absence or permanent after effects.
5	Highly probable	Injuries almost certainly causing death.

A Risk Score is determined by multiply the appropriate rating for likelihood and consequence and obtaining a score. The Risk Assessment is determined by the scoring as per the following categories:

- Low – A score of 5 or less. No further requirements
- Medium – A score of 12 or less but more than 5. Mitigation actions to reduce the likelihood and severity shall be identified and appropriate actions must be endorsed.
- High – A score of 12 or higher. If uncontrolled, a risk event at this level may have a significant impact for the actions and tasks at a construction site as a whole. Mitigating actions need to be very reliable and the construction site staff potentially exposed to that risk shall be advised of identified or potential risks which have been graded at this level.
- Very High – A score above 20 activities shall be suspended immediately. Activities and projects with unmitigated risks at this level shall be avoided or terminated. Mitigation actions of these types of risks may outweigh the benefits of the execution method. This

is because risk events graded at this level have the potential to have significant adverse effects with the potential to cause serious accidents and incidents resulting in fatalities.

P\S	1	2	3	4	5
1	1	2	3	4	5
2	2	4	6	8	10
3	3	6	9	12	15
4	4	8	12	16	20
5	5	10	15	20	25

R	RISK LEVEL
1 - 2	Trivial
3 - 5	Tolerable
6 - 10	Moderate
12 - 16	Significant
20 - 25	Intolerable

Elimination or Mitigation of Hazards

Medium and High Risks will be eliminated or minimized as low as reasonably practicable. This consists of identification of opportunities to reduce the probability and/or consequence of the accident. Hierarchy approach for risk reduction includes:

- Elimination (physically remove the hazard)
- Substitution (replace the hazard)
- Engineering control (isolate people from the hazard)
- Administrative control (change the way people work)
- PPE (use of Personal Protective Equipment)

Preliminary Hazards Identification

The table below identifies the key occupational health and safety hazards that are anticipated for the construction phase of the project (but not limited). As noted earlier, a full assessment must be undertaken for those hazards and other as identified within the risk**.**

Table 40: Preliminary Hazards Identification

Phase	HAZARD
Mobilization/ Operation on field/ Demobilization	Car collision / rollover / third party collision: injury to personnel
	Extreme weather conditions (high temperature, strong wind, etc.), fatigue by heat.
	Presence of objects on structures (rack): falling down and potential operator injury located at lower level
	Use or presence of electrical equipment: electrocution, fulguration
	Use or presence of electrical equipment, sparks hot works: fire development
	Loading and unloading of materials: drop of materials or tools operator injury
	Loading and unloading of materials: vehicles accident
	Simultaneous Operations

	Excessive Noise
Operation on field: Walking at site	Sand, dust: operator injuries due inhalation of dust/sand
	Slip and fall (less than 2 m)
	Vehicles movement in the site routes: operator investment
	High solar radiation: operator injury due to heat stroke
Levelling: use of excavators	Slip and fall less than 2 m
	Drop of materials or tool: personnel injuries
	Run Over
	Hit by, caught between
	Vibrations problem to earthmoving personnel
	Noise problem to earthmoving personnel
Cable trenching: trench excavation	Slip and fall less than 2 m
	Drop of materials or tool: personnel injuries
	Landslides, burial
	Run Over
	Hit by, caught between
	Vibrations problem to earthmoving personnel
	Noise problem to earthmoving personnel
	Confined spaces: asphyxia or intoxication of personnel inside confined spaces
	Burial of personnel inside excavation
Civil works: formwork placing and removal	Slip and falls (less than 2 meters)
	Slip and falls (higher than 2 meters)
	Drop of materials and tools
	Hit by, caught between
	Manual handling: operator injury
Civil works: pouring of concrete	Slip and falls (less than 2 meters)
	Slip and falls (higher than 2 meters)
	Hit by, caught between
	Jets, sprays
Mechanical Assembly	Slip and falls (less than 2 meters)
	Slip and falls (higher than 2 meters)
	Vehicles movement: operator investment
	Noise problem due to use of equipment and tools
	Falling suspended loads
	Operator injury due to compressions, cuts and abrasion
	Use of means for welding: exposure to artificial optical radiation
	Use of means for welding: fire development
	Use of means for welding: exposure to fumes, gases
Electrical Works Commissioning	Works on electrical equipment: electrocution, fulguration
	Slip and falls (lower than 2 meters)
	Use of tools: operator injury due to compressions, cuts and abrasion
	Use of electrical equipment, sparks hot works: fire development

Construction during winter/rainy season	Winter Season: Prevent frostbite, pay attention to keep warm Rainy Season: Prevent electric shock in live operation; Electric protection during rainy
[other]	None

Method Statements

Based on the outcomes of the risk assessment, Method Statements will be developed to outline how tasks will be performed in a safe manner. To achieve this goal, method statements shall include the following:

- Description of the tasks that comprise the works
- Identification of location / area of the works
- Supervisory arrangements during work performance
- Identification of safety supervisor and monitoring arrangements
- Human and material equipment needs
- Identification of occupational health and safety risks associated to the specific work (based on the outcomes of the risk assessment undertaken earlier)
- Precautions / preventive measures to minimize the risks by those carrying out the works (based on the outcomes of the risk assessment undertaken earlier)
- Reference to OHS standards
- First Aid needs
- PPE needs
- Arrangements for area demarcation

It must be ensured that all medium and high risks as identified for a particular activity are covered within the method statements. At a minimum, method statements will be prepared for the following works:

- Mobilization and Early Works
- Civil Works
- Electrical Works
- Mechanical Works
- Testing and Commissioning

Job Safety Analysis (JSA)

Based on the outcomes of the risk assessment undertaken and for high-risk activities only, a Job Safety Analysis (JSA) will be carried out. A JSA is a procedure which shall help to integrate safety and health principles and practices into a particular job operation. The JSA mainly involves breaking down the activity into smaller steps and analyzing the hazards and associated risk associated with each step accordingly. The JSA for each step will identify the recommended actions / steps to be undertaken (e.g., equipment used, PPE requirements, the workers (training and qualification) involved, etc.) and the procedure to be followed to ensure a safe way to perform the job.

For conducting a JSA the following four steps shall be undertaken:

- Step 1: identify the job to be undertaken based on the previous risk assessment as per the procedure identified earlier
- Step 2: breaking the job down into a sequence of logical and chronological steps that ensure that the overall job is completed
- Step 3: identify the key potential hazards and risks that are anticipated and expected throughout each step identified for the job
- Step 4: determine the preventive measures and procedures that are required to be implemented to overcome these risk and hazards. This could include but not limited to the specific PPE requirements, PTW requirements, specific method statement requirements, etc.

The Contractor E&S Manager shall give authorization to start high-risk activities once the following is completed:

- All workers have been instructed on the JSA and its requirements
- All workers have the necessary PPE as defined in the JSA
- All safety equipment is in place as defined in the JSA

Communication

The outcomes of the risk assessment, method statements and JSA will be communicated to all workers that are applicable for that task(s) or works to be undertaken through specialized training and toolbox talk meetings.

Permit to Work System Procedure

A Permit to Work (PTW) system shall be developed for the construction phase of the Project. The PTW is a formal written process to authorize, control and coordinate work activities which are identified as high-risk activities (as per the risk assessment procedure identified earlier under "Section 0").

The work permit is a statement signed by authorized persons that a work shall be carried out under stated precautions and signed for acceptance by the permit holder.

Each permit will be completed following steps:

1. The responsibly entity (Contractor or subcontractor) will fill out the work permit including details showing the equipment, description, location, date and estimated duration of work. The package which will also include the following supporting documents depending on the job to be undertaken:
    - Additional certificates forms will be included (lifting, excavations, etc.) to be issued for the specific work, if required.
    - JSA and risk Assessment for the activity (mandatory for all tasks)
    - Drawings (depending on the task)
    - Layouts and sketches (depending on the task)
    - Single Line Diagrams (depending on the task)
    - Electrical Drawings (depending on the task)
    - MSDS's (depending on the task)

    The more information there is to support a permit to work, the more safety factors can be considered or put in place to make the job safer. Therefore, it is important to submit the supporting documents mentioned above. Failure to provide these documents may result in a Permit to Work application being rejected.
2. The subcontractor submits the above package to the Contractor E&S Manager whom will verify that package complies with all requirements and if approved will stamp his/her signature on the permit.
3. The Contractor submits the above package to the Company E&S Manager who will verify that the package complies with all requirements and if approved will stamp his/her signature on the permit.
4. One copy of the PTW remains with the Contractor and one remains with the Company while the original is put onsite at the specific workplace.
5. After the above is completed, the subcontractor can start the works and should supervise to ensure that all technical and safety requirements are met during the entire task as per PTW requirements.
6. Depending on the type of permit the subcontractor shall re-validate it on a daily basis until the validity period expires. The purpose of the re-validation is to verify that the safety requirements are implemented in place. The re-validation will take place in the site where the work is being carried out and on a daily basis when the work is resume in the mornings by using the specific format for that purpose.

7. Once the work is completed, the permit will be closed out. Subcontractor will have to sign off the permit / certificates for the specific activity.
8. When the validity period of the permit comes to its end and the activity hasn't been completed, the permits / certificates will be closed out. A new Permit / Certificate will be issued following the steps earlier.

Taking the above into account, working activities which shall be carried out under a PTW System, as a minimum are expected to include:

- Hot Works: including any work which involves actual or potential sources of ignition and work for which there may be a risk of a fire and/or explosion, or which involves the emission of toxic fumes from the application of heat
- Cold Works: referring to all potentially hazardous activities not specifically covered by any other PTW. Cold works permits shall include but not be limited to the following:
  - Opening vessels, pipes or enclosed spaces
  - Decontamination of equipment
  - Mechanical maintenance work
  - Any non-routine and potentially hazardous activity
- Electrical Works: required for activities that may determine a risk of electric shock to people while working with electrical equipment
- Work at Height: referring to activities performed aloft and that require use of proper PPEs (i.e., safety harness, inertia reels, etc.). working at height permit shall be obtained whenever a worker is exposed to a hazard of falling more than 2 meters
- Works with Hazardous Substances: regarding use of chemicals and any hazardous substances that may be a dangerous to people, equipment or environment. For additional details on hazardous substances management
- Work in Confined Spaces: regarding spaces not primarily intended or designed as a place of work and including any areas which:
  - Have an atmosphere, which contains potentially harmful levels of contaminant,
  - Have an oxygen deficiency or excess,
  - Cause engulfment,
  - Could have restricted means for exit and entry.
- Excavation Works: all excavation work activities are subject to PTW process
- Crane Lifts: any works that involve crane lifts in any form or way is subject to PTW process
- Night Work: any works in any way or form that is to be undertaken during night-time (i.e. after sunset) is subject to a PTW process
- Road Closure: any construction works or activities that require closure of roads within the project area or leading to the project area are subject to a PTW process

The execution of this system will be totally carried out under written prescriptions and

physical supervision.

When a Lock Out-Tag Out is required (refer to "Section **Error! Reference source not found.**" below), it must be performed before the Work Permit is signed and handed over to the permit holder.

For activities requiring a permit to work, a copy of the risk assessment and Job Safety Analysis (JSA) and method statement shall be attached to the permit.

Site Control Occupational Health and Safety Procedure

This section identifies the site control occupational health and safety procedures that shall be followed and implementation throughout the construction phase of the project.

Occupational Health and Safety Signage

Safety signs are required on site in order to:

- Alert workers of hazards (such as noise, electrical, falling objects, suspended loads, etc.)
- Prohibit action (such as do not smoke, do not exceed speed limits, etc.);
- Require the use of PPE (wear helmet, ear protection, etc.);
- Identify hazardous substances

The safety signage shall be in accordance to International standard ISO 7010:12.

All labels, displays, signs and instructions shall be in Project language. Wherever possible, internationally agreed pictograms shall be provided with the signs, in order to aid understanding by visitors.

The orientation of instrument displays, dials and gauges, etc. shall be consistent, such that under "normal" operational conditions all indicators shall point in the same direction.

All labels, displays and signs shall be easily readable at eye level from the normal position of the operator. The following shall be considered:

- Size of the features on the display relative to the viewing distance;
- The contrast of the features against the background;
- The illumination levels to ensure good readability and avoid glare from natural light;
- The form of the display (graphic, letters, figures etc.);
- The font size and type (for letters and figures);
- Duration of the display (where applicable) and combinations of color.

The following safety signs are that shall be considered as applicable.

Mandatory Signs

Eye protection must be worn

Safety helmet must be worn

Ear protection must be worn

Respiratory equipment must be worn

Safety boots must be worn

Safety gloves must be worn

Safety harness must be worn

Face protection must be worn

Safety overalls must be worn

Pedestrians must use this route

General mandatory sign (to be accompanied where necessary by another sign)

Prohibitory Signs

Warning Signs

Training Requirements

This section provides an overview of the key training requirements that are considered applicable for this plan.

Workers

- As part of the HSE induction training that will be implemented for all workers (Contractor , subcontractors, security personnel, etc.), the Contractor E&S Manager will include a module on OHSP

Specialized Training

All workers regardless of whether from the Contractor or subcontractor must attend a specialized occupational health and safety training that shall be completed prior to workers being exposed to hazards of a given work task.

The Contractor E&S Manager will establish when, what and who shall involve in such specialized occupational health and safety training sessions based on the outcomes of OHS risk assessment process

The specialized occupational health and safety training will be required but not limited to the following:

- Safe rigging and lifting
- Welding and Hot Works
- Ladders and scaffolding
- Electrical works
- Fall protection
- Lock-out/tag-out
- Excavation
- Hot Works
- Power and Hand Tool Safety
- Heat Stress
- Permit to work
- Defensive driving
- Lifting and rigging safety
- Banksman
- Manual handling
- Confined Spaces
- Excavations

In addition, all workers that will be involved with the erection activities for the PV Panels will be required to undertake a third-party OHS training.

Use of PPEs

All workers shall be trained in the use of PPE and their competence will be assessed in order to evaluate that their knowledge is appropriate to undertake the specific tasks.

Monitoring And Reporting Requirements

- Monitoring and reporting requirements will be undertaken (daily site walkovers, weekly site inspections, audits, weekly reports and monthly reports)
- KPIs are established to measure and monitor the effectiveness of implementation of this plan. The KPIs that shall be implemented are summarized in the table below and shall be included within the reporting requirements.

No.	KPI	Measurement Action	Frequency	Goal
1	Total number of OHS incidents	Submission of log sheet	Monthly	Zero
2	Number of OHS near	Submission of log sheet	Monthly	Zero

	misses			
3	Number of OHS injuries	Submission of log sheet	Weekly	Zero
4	Number of worked hours (EPC and subcontractors)	Submission of log sheet	Monthly	N/A
5	Lost working hours	Submission of log sheet	Monthly	Zero
6	Number of working days since last incident	Submission of log sheet	Monthly	Zero
7	Number of Fatalities	Submission of log sheet	Weekly	Zero
8	Number of Lost time Injuries (LTI)	Submission of log sheet	Monthly	Zero
9	Number of Lost Time Injury Frequency Rate (LTIFR)	Submission of log sheet	Monthly	Zero
10	Total Recordable Frequency Rate (TRFR)	Submission of log sheet	Monthly	Zero
11	Severity Rate (SR)	Submission of log sheet	Monthly	Zero
12	Number of restricted work cases	Submission of log sheet	Monthly	Zero
13	Number of restricted workdays	Submission of log sheet	Monthly	Zero
14	Number of medical treatment cases	Submission of log sheet	Monthly	Zero
15	Number of first aid cases	Submission of log sheet	Monthly	Zero
16	Number of OHS hazards or risks eliminated or mitigated	Submission of log sheet	Monthly	Zero
17	Number of OHS corrective actions identified and completed	Submission of log sheet	Monthly	Zero
18	Number of OHS behavioral observations completed	Submission of log sheet	Monthly	Zero

Roles and Responsibilities

This section identifies the roles and responsibilities for the key personnel involved in the implementation of this plan.

Contractor Site Manager

- Ensure resources required are available for the implementation of this OHSP
- Oversee the implementation of this OHSP
- Guarantee procedures are in place that ensure that all workers under his authority and responsibility are medically fit, trained, accredited, equipped and competent to perform their work
- Agree on the safe system of work/ methodology to be adopted before commencing work and ensure compliance with the safe work procedures (internal procedures).
- Coordinate with relevant entities prior to starting any subcontracted work of high risk and ensure that all safety measures are agreed upon and adopted.
- Ensure subcontractors comply with construction safety standards \ procedures.
- Ensuring subordinates safety performance and accountability, and compliance to the safety program.
- Communicate safety requirements to subordinates.
- Ensuring the quality of subcontractor safety performance.
- Review and respond to subcontractor safety assessments.

Contractor E&S Manager

- Induction training prepared and delivered must include module on OHSP and control measures
- Ensure that all workers are adequately trained and competent as related to this plan
- Prepare and update the OHS registers and forms including data for Key Performance Indicators (KPIs)
- Review and approve risk register a submitted by subcontractors and if not prepare he/she will have overall responsibility for preparing
- Update the OHSP when required during the construction phase
- Guarantee that all workers under his authority and responsibility are medically fit, trained, accredited, equipped and competent to perform their work
- Ensures the availability of personal protective equipment (PPE)
- Oversee implementation of specialized OHSP technical training
- Administer appropriate safe work practices/procedures for the project.
- Promote a high level of safety awareness on the project through new employee /Contractor/ Subcontractor orientation and contact with project supervision.
- Maintaining all safety-related records and files associated with the project.
- Evaluate Contractor/Subcontractor safety programs.
- Continuously evaluate project working conditions and safe work practices, and if warranted, develop positive recommendations for project management.
- Establish personal protective equipment requirements and recommend requisition for purchase.
- Plan the safety publicity program and order posters, visual aids, signs, etc.

Contractor HSE Officers

- Contractor is required to appoint an Contractor E&S Manager supported by 2 full senior Contractor HSE Officers, 1 Contractor accommodation HSE Officer, and 1 Contractor HSE Officer for each 50 workers. Contractor HSE Officers roles and responsibilities include: Verifies that all tools and equipment are adequate and safe for use

- Promotes OHS practices at the job site

- Enforces OHS guidelines
- Watches out for the safety of all workers and works to protect them from entering hazardous situations.
- Responds to workers safety concerns

Subcontractors HSE Officers

Subcontractors with less than 20 workers shall deploy a non-dedicated E&S Manager. Subcontractors with more than 20 workers shall deploy a dedicated HSE Officer and an additional HSE Officer for each additional 50 workers deployed onsite. Roles and responsibilities include:

- Implement and monitor OHSP as relevant
- Participate, prepare and deliver specialized OHSP technical training and TBTs as applicable
- Analyze the work scope and prepare risk assessment, construction method statements and JSA as required for work activities
- Ensure the availability of required resources to properly implement the OHSP and requirements
- Verifies that all tools and equipment are adequate and safe for use
- Promotes safe practices at the job site
- Enforces safety guidelines
- Reporting of OHSP incidents

Project Personnel

- Cooperate with, and constructively participate in this OHSP Plan
- Comply with OHSP requirements that apply to an individual's work
- Work within competencies held
- Adhere to procedures to protect your safety, the safety of your fellow workers, and the safety of the general public
- Be aware of, and work for, the health and safety of everyone in the workplace
- Comply with all safe-working directions given in the workplace
- Not misuse or damage any equipment

Wear all appropriate protective clothing and equip