

# Environmental Due Diligence Report and Environmental Code of Practice

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## Uzbekistan: Climate-Smart Water Management Improvement Project

Prepared by Project Coordination Unit of Uzsuvtaminot Joint Stock Company for the Republic of Uzbekistan and the Asian Development Bank (ADB).

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## CURRENCY EQUIVALENTS

(as of 2 October 2023)

Currency unit	–	Sum (SUM)
SUM1.00	=	\$0.000082
\$1.00	=	SUM12,160

## ABBREVIATIONS

ADB	–	Asian Development Bank
AMS	–	asset management system
ECP	–	environmental code of practice
EDDR	–	environmental due diligence report
ERP	–	enterprise resource planning
GIS	–	geographic information system
GRM	–	grievance redress mechanism
IT	–	information technology
NRW	–	non-revenue water
O&M	–	operation and maintenance
PCU	–	project coordination unit
PMC	–	project management consultant
REA	–	rapid environmental assessment
SPS	–	safeguards policy statement
TWNMS	–	tactical water network management system
UJSC	–	Joint Stock Company Uzsvtaminot
WSS	–	water supply and sanitation

## NOTES

- (i) The fiscal year (FY) of the Government of Uzbekistan ends on 31 December.
- (ii) In this report, "\$" refers to United States dollars.

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## I. BACKGROUND

### A. Introduction

1. The project aims to improve water security, reduce climate vulnerability, and increase access to safe and reliable water supply in Uzbekistan by improving the operational efficiency of its water supply and sanitation utilities. It will achieve this by: (i) modernizing water management systems based on smart information technology (IT) solutions to improve asset management and sustainability of services delivery, and (ii) strengthening institutional capacity, including the role of women in service delivery, to enable better decision-making and enhance water management and energy use to mitigate climate change through improved data quality and system processes.<sup>1</sup>

2. The project introduces and operationalizes a nationwide package of integrated smart information technology (IT) foundation systems in order to provide continuous, real-time technical, operational, and financial information of water networks and systems, from which improvement initiatives and public-private partnership opportunities can be implemented across a spectrum of water utility operations. Utilizing secure gateways, real-time data will be available continuously through data management centers, substantially improving sector visibility, transparency, and accountability. The project complements Asian Development Bank (ADB) initiated institutional reform actions, providing backbone IT-based infrastructure for improved water governance and stewardship. It also fosters gender equality in the water supply and sanitation (WSS) sector workforce, and the adoption of approaches and interventions to enhance gender diversity.

### B. Project Description

3. **Impact and outcome.** The project is aligned with the following impact: environment, health, and living conditions of the population enhanced. It will have the following outcome: digital transformation for increased operation efficiency and climate resilience of UJSC and suvtaminots. The project has the following three outputs.

4. **Output 1: enhanced climate-smart water management systems for climate resilience introduced and operationalized.** Output 1 will operationalize an integrated package of climate-smart, IT-based utility management systems and support structures in the Joint Stock Company Uzsuvtaminot (UJSC) and its suvtaminots as an initial, vital step in their development to become customer-focused, efficient, and climate-resilient water utilities. Centralized through a national data management center to be located in the UJSC, and with regional data management centers in each suvtaminot, the systems include hardware and software infrastructure for (i) a geographic information system (GIS),<sup>2</sup> (ii) a tactical water network management system (TWNMS),<sup>3</sup> and (iii) an asset management system (AMS).<sup>4</sup> The output will also assist the UJSC and suvtaminots to complete an ongoing nationwide bulk metering and telemetry program by installing approximately 4,152 bulk meters, 3,965 isolation valves, 3,274 telemetry systems, and other equipment in eleven suvtaminots nationwide.<sup>5</sup>

5. **Output 2: UJSC and suvtaminot smart water management capabilities enhanced.** Output 2 will assist to build managerial and operational capacity in the UJSC and suvtaminots to support climate-smart water management system development. It will assist to: (i) prepare a smart water

<sup>1</sup> Saving water saves energy and reduces carbon emissions.

<sup>2</sup> The GIS will generate interactive electronic maps for spatial visualization and management of networks.

<sup>3</sup> This system will continuously capture and update data into a 'digital twin' of the water networks.

<sup>4</sup> The AMS will maintain asset registers and valuations, and drive capital maintenance planning and O&M scheduling.

<sup>5</sup> Including 92 portable ultrasonic clamp-on meters, and 35 laptops. The bulk metering and telemetry program will provide accurate, real-time measurements of bulk water volumes entering suvtaminot water supply systems.

management strategy and roadmap; (ii) formalize change management partnerships between the UJSC and each suvtaminot; (iii) refine utility institutional structures and create dedicated data management centers in each utility; (iv) recruit a smart systems leader for each data management center; (v) conduct capacity assessments and select personnel, prioritizing women, for assignment to smart management centers; (vi) support smart systems management and operations, including training and professional accreditation, and (vii) provide further managerial and operational support.

6. **Output 3: suvtaminots' financial management capacity improved.** Output 3 will assist to improve the sector's capacity for financial management in line with enhancing the smart water management systems in output 1 by (i) integrating the AMS and billing system under the financial module of a new enterprise resource planning (ERP) system,<sup>6</sup> (ii) upgrading the system to integrate with improvements in GIS and AMS, (iii) building an effective financial risk management function within the UJSC and its 17 suvtaminots, (iv) updating accounting policies and procedures for the integration of the billing system and AMS with ERP and providing customized training on the updated procedures; (v) supporting transformation to IFRS and the audit of 2022-2027 financial statements, and (vi) providing hands-on capacity building for the UJSC and suvtaminots to produce the IFRS-based financial statements for 2028-2029.

7. **Paris agreement alignment and climate resilience.** The project is expected to comply with the Paris Agreement.<sup>7</sup> Climate change in Uzbekistan is expected to increase water scarcity, aridity, and droughts, elevating municipal water and irrigation consumption demands. Through the proposed climate-smart water management solutions, the project will reduce climate vulnerability by increasing suvtaminot efficiency, enhancing asset knowledge, implementing climate-informed planning and O&M activities, reducing non-revenue water (NRW), promoting water conservation behavior, and enhancing water network resilience against climate change and its induced shocks.<sup>8</sup>

8. **Implementation arrangements.** The UJSC will be the executing agency for the project. It is the national entity responsible for WSS service provision nationwide, and implements projects funded by international financial institutions (IFIs). The project coordination unit (PCU) in the UJSC will be the implementing agency for the project, being responsible for procurement, contract and financial management, safeguards compliance, and reporting, among other administrative tasks.

## II. LEGAL AND REGULATORY FRAMEWORK

### A. Uzbekistan's Legislative and Policy Framework

#### 1. National Institutional Framework for Environmental Assessment

9. **The Ministry of Ecology and Environmental Protection and Climate Change (MEEPCC) of the RUZ** is the primary environmental regulator. It reports directly to 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.

<sup>6</sup> To allow among other functions, the preparation of timely and transparent financial statements in accordance with international standards.

<sup>7</sup> The project is aligned with the mitigation goals (BB1) and climate adaptation and resilience goals (BB2 - the project has no major infrastructure development that will be vulnerable to physical risks). The project components (water supply efficiency) fall under the universally aligned list (UA1). The project will directly enhance Uzbekistan water network's climate resilience. Paris Agreement Alignment adaptation and climate resilience methodology is adopted to verify BB2 alignment, as detailed in the climate risk and vulnerability assessment that identifies appropriate adaptation and mitigation measures.

<sup>8</sup> A checklist for preliminary climate risk screening is in Appendix 2.

The MEEPCC has a central body in Tashkent, and regional branches and agencies providing research and technical support. Regional environmental authorities are structured similarly to the MEEPCC. Other state agencies involved directly or indirectly in the regulation and protection of the environment are:

- (i) **The Ministry of Energy of RUz** is the authorized state body to (a) implement production sharing agreements, (b) implement unified state policy for renewable energy sources, (c) develop unified state policy and strategic directions in nuclear energy, and (d) introduce modern energy-efficient and energy-saving technologies in state bodies and organizations, as well as monitoring the efficiency of energy consumption.
- (ii) **National Research Institute for Renewable Energy** under the Ministry of Energy is a structural unit of the Ministry also responsible for implementation of a unified state policy in the field of the use of renewable energy sources.
- (iii) **The Ministry of Innovative Development** is a government body that implements a unified state policy in innovation, and scientific and technical development aimed at the comprehensive development of public and state life, and increasing the intellectual and technological potential of the country. The Ministry is an authorized state body in the field of science, scientific and innovative activities.
- (iv) **The Ministry of Health** develops and approves sanitary regulations, rules, and hygienic standards, and carries out state supervision of sanitary and epidemiological services, regardless of their departmental subordination.
- (v) **The Ministry of Water Resources.** Implements unified state policy water resources management, and coordinates the activities of state bodies, economic management bodies and other organizations in the field of the rational use and protection of water resources, prevention and elimination of the harmful effects of water.

## 2. National Environmental Assessment Legislation

10. The Constitution of RUz (April 30, 2023), under its nature protection and management framework, defines the rights and responsibilities of its citizens to include the following:

- (i) Everyone has the right to a favorable environment, and reliable information about its condition.
  - a. The government creates conditions for the implementation of public control in the field of urban planning in order to ensure the environmental rights of citizens and prevent harmful effects on the environment.
  - b. Draft urban planning documents are subject to public discussion in the manner prescribed by law.
  - c. 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 a national wealth, are subject to rational use and are protected by the state.
  - a. 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).

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

- (i) **Law “On Nature Protection”** (1992, amended in 2021) states legal, economic, and organizational foundations 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 SEE is prohibited.
- (ii) **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 and equipment, ozone layer protection requirements, the obligations of enterprises, institutions and organizations toward air protection, and compensations for damages from air pollution.
- (iii) **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 dehqan farms and individuals in the field of water relations.
- (iv) **Law “On Wastes”** (2002, amended in 2011). This law addresses waste management, exclusive of emissions and air and water pollution, and confers authority to the MNR concerning inspections, coordination, and environmental expertise. It also establishes certain parameters regarding locations for waste 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 of waste reduction methods in household activities.
- (v) **Law “On Environmental Audit”** (2021). This law was adopted to regulate environmental audits in 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.’
- (vi) **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.
- (vii) **Law “On Protection of Flora”** (1997, amended in 2016). This law regulates relations in the field of protection and use of the plant world growing in natural conditions, as well as wild plants contained in the conditions of culture for their reproduction and conservation of genetic resources.
- (viii) **Law “On Protection and Use of the Wildlife”** (2016). This law regulates relations in the field of protection, use, restoration and reproduction of wildlife in order to ensure the conditions of its existence, conservation of species diversity, integrity of natural communities and habitat.



- (ix) **Law #ZRU-628 “On amendments and additions to the Law of the RUz “On rational use of energy”** (2020). The purpose of this law is to form a general legal framework that ensures the conservation of national energy resources, the efficient use of energy and production potential.
- (x) **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.

12. **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 Republic of Uzbekistan till 2030”;
- (ii) Decree of the President of the RUz #PP-436 “On measures to increase the efficiency of reforms aimed at the Republic of Uzbekistan’s transition to a “green” economy until 2030” (2022);
- (iii) Decree of the Cabinet of Ministers of the RUz #343 “On further improvement of the environmental pollution assessment system” (2021);
- (iv) Decree of the President of the RUz #UP-165 “On approval of the strategy of innovative development of the Republic of Uzbekistan for 2022-2026” (2022, amended in 2023);
- (v) Law on Protection and Use of Archeological Heritage (2009);
- (vi) SanR&N No 0339-16 - Sanitary Rules and Norms for Planning and Development of Populated Areas of Uzbekistan;
- (vii) SanR&N No 0022-22 - Sanitation rules hygiene requirements for the organization of construction production and construction work;
- (viii) SanR&N No 0318-15 - Hygienic and anti-epidemic requirements for the protection of water in reservoirs on the territory of the Republic of Uzbekistan;
- (ix) SanR&N No 0255-08 - Main criteria for hygienic assessment of the water bodies contamination for assessing health risks for population in Uzbekistan;
- (x) SanR&N 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;
- (xi) SanR&N 0293-11 - Hygienic standards list of maximum permissible concentrations (MPC) of pollutants in the atmospheric air of populated areas on the territory of the Republic of Uzbekistan;
- (xii) SanR&N No 0212-06 - Hygienic assessment of the degree of soil pollution of different types of land use under specific conditions of Uzbekistan;
- (xiii) SanR&N No 0183-05 - Hygienic requirements for the quality of the soil in settlements areas in specific natural and climatic conditions of Uzbekistan;
- (xiv) KMK 3.01.02-00 - Construction safety;
- (xv) O’z DSt 1057:2004 - Vehicles. Safety requirements for technical conditions;
- (xvi) BR&N No 2.01.08-96 – Noise protection;
- (xvii) BR&N No 3.01.02-00 - Construction Safety Standards.

3. **Environmental Impact Assessment**

13. 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). 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.

14. The Ministry of Ecology, Environmental Protection and Climate Change (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). The CSEE in the regions and in the Republic of Karakalpakstan carries out the SEE for projects classified as Category III and IV (low risk and local risk) to assess their environmental impacts. 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).

15. 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. 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 MNR supervise the compliance with the requirements and terms specified in the SEE’s opinion.

This project is not subject of national environmental expertise, therefore development of an EIA with approval of the MEEPCC is not required.

#### **4. Uzbekistan National Labor Requirements**

16. The Constitution of the Republic of Uzbekistan (1992) includes a chapter on the economic and social rights of citizens. According to it, everyone has the following rights:

- (i) “Have the right to work, free choice of work, fair conditions of labor and protection against unemployment in the procedure specified by law. Any forced labor shall be prohibited except for punishment under the sentence of a court or some other instances stipulated by law” (Chapter IX, Article 37);
- (ii) The right to rest is included in the Article 38: “Citizens, working on hire, shall be entitled to a paid rest. The number of working hours and paid labor leave shall be specified by law”;
- (iii) Social security in old age in the event of disease, disability, loss of breadwinner and in other cases stipulated under the law (Article 39);
- (iv) Have the right to skilled medical care (Article 40);
- (v) A guarantee of equal rights for men and women (Article 46); and
- (vi) “Have the right, both individually and collectively, to submit applications and proposals, and to lodge complaints with competent state bodies, institutions or public representatives. Applications, proposals and complaints shall be considered in the procedure and within the time-limit specified by law” (Chapter VIII, Article 35).

17. The **Labor Code** of the Republic of Uzbekistan. The Labor Code, introduced in April, 1996, is considered as 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 and leave, 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.

18. Article 6 of the Labor Code prohibits discrimination and guarantees that all citizens have equal rights to work; discrimination in labor relations is prohibited. Any differences, non-admission or preference, denial of employment, regardless of nationality, race, gender, language, religion, political beliefs, social status, education, property, leading to a violation of equality of opportunities in the field of labor, are prohibited. A person who considers that he or she has been subjected to discrimination at work may apply to the court for the elimination of discrimination and compensation for material and moral damage caused to him/her.

19. The Ministry of Employment and Poverty Reduction of the Republic of Uzbekistan 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 the population, and medical-social rehabilitation of persons with disabilities. 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 Ministry of Employment and Poverty Reduction, and its territorial subordinate structures according to the Statement on the State Labor Inspection.<sup>9</sup>

20. **Occupational Health and Safety (OHS)** legislation comprises the Labor Code, the Law on Occupational Health and Safety, the decrees of the President of the Republic of Uzbekistan, Occupational Health and Safety standards, decisions of executive government agencies taken within their competence in the form of decrees, executive orders, regulations, directives, rules, etc.

21. The Law on "**Labor Protection**", enacted on September 22, 2016, further improves the labor protection system by strengthening the responsibilities of employers and workers, defining public authorities' powers to ensure the proper monitoring of working conditions and safety, increasing the efficiency of public control, and bringing certain provisions of the current law in accordance with the requirements of the newly adopted legislative acts into the modern market economy. The law introduces new concepts and clarifies issues regarding the certification of workplaces on working conditions, audit of the OHS management system, investigation and registration of accidents at work, and occupational diseases. It establishes specific mechanisms for public and trade union participation in the implementation of public control in this field, and secures their rights related directly to OHS activities.

22. The Law on **Occupational Safety in Hazardous Production Facilities**, enacted on August 25, 2006, stipulates the legal, economic, and social terms of ensuring safe exploitation of hazardous production facilities, with the aim of building enterprise capacity and preventing accidents.

23. In addition to the main legislation, the Republic also has national normative documents addressing the issues of occupational health and safety. These include (i) Sanitary Rules and Norms (SanPiN), (ii) State Occupational Safety Standards (GOST, SSBT), (iii) Construction Norms and Rules (SNiPs), (iv) standards of the content of harmful substances (maximum allowable concentrations and

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<sup>9</sup> Attachment #3, Resolution of the Cabinet of Ministers #1066 of 31.12.2018 "On measures to improve the performance of the Ministry of Employment and Poverty Reduction of the Republic of Uzbekistan."

levels), and (v) normative methodological documents on individual issues setting forth requirements for occupational safety in hazardous facilities, when manufacturing or applying various products. In addition to state normative documents, various sectors of industry enforce departmental and interdepartmental norms, requirements and rules of occupational safety and health.

24. Enforcement of OHS legislation. The main state bodies responsible for the implementation of OHS policy are:

- (i) Ministry of Employment and Poverty Reduction, including the State Labor Inspection under the ministry with territorial branches distributed throughout the Republic;
- (ii) State Inspection for Safety in Industry, Mining and Housing and Utilities Sector; and
- (iii) Department of State Sanitary Epidemiological Supervision under the Ministry of Health of the Republic of Uzbekistan.

25. The Ministry of Employment and Poverty Reduction has an OHS directorate and the State Labor Inspection and its regional branches in the Republic of Karakalpakstan, viloyats (provinces), and the Tashkent city and district directorates and branches on labor, employment and social security. They constitute a single system of supervision and monitoring compliance with OHS requirements for ministries and agencies, institutions, organizations, and industrial and agricultural enterprises, with the exception of hazardous facilities that are under the jurisdiction of the State Inspection on Safety in Industry, Mining and the Housing and Utilities Sector.

## **B. Applicable ADB Policies and Environmental Assessment Requirements**

26. Environmental and social safeguards are a cornerstone of ADB's support to inclusive economic and environmentally sustainable growth. ADB's Safeguards Policy Statement (SPS), adopted in 2009, governs the environmental and social safeguards of ADB's operations. The objectives of the SPS are to avoid, or when avoidance is not possible, to minimize and mitigate, adverse project impacts on the environment and affected peoples, and to assist borrowers to strengthen their safeguard systems and develop capacity to manage environmental and social risks.

27. SPS builds upon three previous safeguard policies regarding the environment, involuntary resettlement, and indigenous peoples, and brings them into a consolidated policy framework that enhances effectiveness and relevance. The SPS applies to all ADB- supported projects. ADB works with borrowers to put policy principles and requirements into practice through project review and supervision, and capacity development support. The SPS also provides a platform for participation by affected people and other stakeholders in project design and implementation. The objectives of ADB's safeguards are to:

- (i) Avoid adverse impacts on the environment and affected peoples, where possible.
- (ii) Minimize, mitigate, and/or compensate for adverse project impacts to the environment and affected peoples when avoidance is not possible.
- (iii) Assist borrowers to strengthen their safeguard systems, and develop the capacity to manage environmental and social risks.

28. ADB will only finance projects that comply with its safeguard policy statement and with the host country's social and environmental laws and regulations, and its obligations under international law. Based on preliminary review, projects are assigned to one of the following categories:

- (i) **Category A** if the project is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. An environmental impact assessment is required.
- (ii) **Category B** if a project's potential environmental impacts are less adverse than those of category A projects, and if few if any of the impacts are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects. An initial environmental examination is required.
- (iii) **Category C** if the project is likely to have minimal or no adverse environmental impacts. Environmental implications need to be reviewed and an environmental due diligence report (EDDR) is required.

29. ADB prioritizes processes of information disclosure, and consultations and participation during project preparation and implementation. It publishes final or updated environmental impact assessments and/or initial environmental examinations on its own website. ADB is committed to working with borrowers/clients to put meaningful consultation processes into practice. ADB requires that the borrowers establish and maintain a grievance redress mechanism (GRM) to receive and facilitate resolution of affected peoples' concerns and grievances about the borrower's/client's social and environmental performance at the project level.

30. The project is categorized **as C for environment** as minimal environmental impacts are anticipated. The project only therefore requires an EDDR, based on data from the feasibility study, preliminary design, site visits, and interviews with technical experts.<sup>10</sup>

### C. Anticipated Environmental Impacts and Risks

31. Project impacts are expected to be limited in magnitude, of short duration, and highly dispersed between the suvtaminots. Only one component of the project includes physical works, incorporating the installation of bulk meters, isolation valves, telemetry systems, and related equipment and materials in eleven suvtaminots nationwide. Some of this equipment will be installed below the ground surface in chambers of plan dimensions up to 4 m length by 3 m width. Chamber construction will necessitate temporary and minor earthwork excavations, followed by equipment installation. All chambers will be covered. Small excavations are also envisioned to install the foundations of protective kiosks for telemetry equipment, consisting of small concrete pads of plan dimensions 0.7 m by 0.3 m.

32. Environmental impacts arising from these limited physical works will include (i) the temporary generation of dust, noise and vibration during excavation and construction works, (ii) limited solid waste generation,<sup>11</sup> (iii) almost negligible drainage impacts due to the small size and covering of excavations, (iv) minor vehicular movements, (v) limited on-site machinery due to the chambers being excavated manually or utilizing small excavators, and (vi) appropriate health and safety provisions. Potential impacts and associated mitigation measures are summarized on Table 1.

**Table 1: Anticipated Environmental Impacts**

Potential Impact	Risk	Remarks
Temporary generation of dust, noise and vibration during excavation and construction works	Low	Excavations will be of limited plan extent, being excavated manually or by utilizing small-scale excavation machinery. All machinery will be fitted with exhaust emission control devices and be in good

<sup>10</sup> A rapid environmental assessment (REA) checklist is in Appendix 1.

<sup>11</sup> Including spent lubrication cartridges that will be properly disposed.

		working condition in accordance with manufacturer specifications.
Solid waste generation	Very low	Generated solid waste, which is expected to be minimal, will be segregated and recycled where possible, with residual waste being properly stored, and collected, transferred, and disposed of by approved waste management utilities. The burning of solid waste will be prohibited.
Drainage impacts due to excavations	Very low	Drainage impacts will be minor due to excavations being limited in plan area, temporary in nature, and will be covered once construction is completed.
Vehicular movements	Low	Vehicle movements will be minor due to the limited nature and extent of the excavation and installation works. Vehicles will be maintained in good working order in accordance with manufacturers specifications, and be fitted with exhaust emission controls.
Wastewater from domestic sewage of construction workers	Very low	Contractors will provide adequate toilet facilities
Occupational health and safety (OHS) impacts	Low	Contractors will adhere to the project's environmental code of practice (ECP) and all applicable international and national OHS regulations and requirements.

33. A virtual meeting was held with the UJSC and suvtaminots to (i) disseminate project information in terms of its activities and scope of work, (ii) discuss the nature of potential project impacts and mitigation, (iii) provide information regarding ADB and government environmental and social safeguards requirements, including grievance redress, and (iv) ensure suvtaminot personnel are aware of the project's future plan of actions. The meeting was held on 8 June 2023 and included appropriate UJSC and suvtaminot personnel. It provided ample opportunities for questions and discussions regarding environmental due diligence matters. The meeting included a total of 64 participants. Environmental issues or concerns relating to the project were not raised at the meeting.

**III. MITIGATION MEASURES**

34. The above minor and/or temporary environmental impacts will be mitigated through the implementation of an environmental code of practice (ECP), as presented in Appendix 3. The ECP provides guidelines for best operating practices in environmental protection, to be followed by contractors for the sustainable management of environmental issues. It will be annexed to the general conditions of all contracts carried out under the project, and strictly enforced throughout implementation.<sup>12</sup> As shown in Appendix 3, the ECP includes the following requirements:

- (i) ECP 1: Waste management.
- (ii) ECP 2: Fuels and hazardous goods management.

<sup>12</sup> If national regulations differ from the measures and levels stipulated in the ECP, then the project will be required to achieve the most stringent requirement.

- (iii) ECP 3: Water resource management.
- (iv) ECP 4: Air quality management.
- (v) ECP 5: Noise and vibration management.
- (vi) ECP 6: Road transport and road traffic management.
- (vii) ECP 7: Worker-based camp management.
- (viii) ECP 8: Community and worker's health and safety.

35. The ECP will be included as an integral part of each contract. Each contractor will provide copies of the ECP to all workers in the English and Uzbek language as appropriate, and keep copies of the ECP on site throughout the contract period. Any deviation from or non-compliance with the conditions established in the ECP will constitute a failure in compliance and be subject to corrective action.

#### IV. SAFEGUARD ROLES AND RESPONSIBILITIES

36. **Executing and implementing agencies.** As mentioned above, the PCU in the UJSC, as the implementing agency, will be responsible for project implementation, including environmental and other safeguards monitoring and compliance. The PCU is dedicated to the implementation of ADB funded water supply and sanitation sector projects throughout Uzbekistan, and has experience in the implementation, monitoring, and reporting of ADB environmental safeguard procedures and protocols. The project also includes a project management consultant (PMC), which will be assigned throughout the project's five year duration to assist the PCU to implement the project. The PMC includes the intermittent assignment of an international environmental specialist (3 person months assignment) and a national environmental specialist (10 person months assignment) in order to monitor, evaluate and report on project activities and ensure environmental compliance.

37. **Project contractors.** As an integral part of contract compliance, contractors will be required to implement the ECP throughout contract implementation, and provide implementation reports to the PCU. Each contractor will appoint an environmental health and safety (EHS) manager to be responsible, on a day-to-day basis, for ensuring ECP implementation and compliance, coordination with environmental and other safeguards specialists, implementing field-level grievance redress, and ongoing reporting.

#### V. SAFEGUARDS MONITORING AND REPORTING

38. Construction works will be continually monitored by EHS and other relevant contractor personnel, who will liaise with and report to the PCU and PMC on a day-to-day basis. The PCU will prepare and submit reports to the ADB detailing ECP implementation and compliance as part of the quarterly project progress reports.

#### VI. CONCLUSIONS AND RECOMMENDATIONS

39. Environmental analysis and the evaluation of potential impacts and risks indicates that the project is unlikely to have any significant adverse or irreversible environmental impacts. Potential environmental impacts are considered to be very low risk, and may only happen during temporary construction and installation works. Dust, noise, and vibration impacts will be minimal and dispersed, the minor amount of waste generated will be properly segregated and either recycled or disposed of in accordance with appropriate regulations, drainage impacts will be relatively inconsequential due to the small excavation footprints, the movements of vehicles will be limited, and excavations will be dug either manually or by utilizing small mechanical excavators.

40. Minor impacts will be avoided through detailed construction planning, and by providing clear instructions to contractors in ECP implementation, followed by close and continuous monitoring to ensure compliance. The following **recommendations** are applicable to the project to ensure that significant impacts are not encountered.

- (i) Provide induction to contractors to ensure that they are fully appraised of national EHS and other requirements, and the requirements SPS 2009 of the ADB.
- (ii) Ensure that contractor personnel are fully aware of the ECP and related responsibilities, and that at least Uzbek language copies of the ECP are maintained on-site.
- (iii) Ensure that contractors are fully aware that deviation from, or non-compliance with the provisions of the ECP will constitute a compliance failure and result in corrective action.
- (iv) Facilitate early acquisition of statutory clearances, and ensure that their conditions and provisions are incorporated in project designs.
- (v) Require contractors to strictly implement the project's mitigation measures, and comply with health and safety requirements.
- (vi) Ensure that contractors employ qualified and professionally certified EHS personnel, to be responsible for (a) environmental monitoring, documentation, reporting, and (b) preparing and implementing any necessary corrective actions.



## Appendix 1 Rapid Environmental Assessment (REA) Checklist

**Instructions:**

- (i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Safeguards Division (SDSS), for endorsement by Director, SDSS and for approval by the Chief Compliance Officer.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's: (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

**Country/Project Title:**

Uzbekistan/Climate Smart Water Management Improvement Project

**Sector Division:**

CWUW

Screening Questions	Yes	No	Remarks
<b>A. Project Siting</b> Is the Project area adjacent to or within any of the following environmentally sensitive areas?			It is anticipated that the project's physical works relating to meter and telemetry installation will primarily be implemented within the existing property boundaries or setbacks of suvtaminots, such as within the confines of water treatment plants and water distribution centers (pump stations), and within setback areas of transmission mains, standalone wells, and wellfields.
▪ Cultural heritage site		X	
▪ Legally Protected Area (core zone or buffer zone)		X	
▪ Wetland		X	
▪ Mangrove		X	
▪ Estuarine		X	
▪ Special area for protecting biodiversity		X	
<b>B. Potential Environmental Impacts</b> Will the Project cause...			
▪ impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to physical cultural resources?		X	(Please refer to the remarks on "Project Siting" above.)
▪ disturbance to precious ecology (e.g. sensitive or protected areas)?		X	Same as above.
▪ alteration of surface water hydrology of waterways resulting in increased sediment in streams affected by increased soil erosion at construction site?		X	Same as above.
▪ deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?		X	Same as above.
▪ increased air pollution due to project construction and operation?	X		Relatively minor amounts of dust, noise, and vibration might be generated during the physical works, but these impacts are expected to be temporary and minor, and occur only within limited areas. These impacts will be managed through the Environmental Code of Practice (ECP).
▪ noise and vibration due to project construction or operation?	X		

## Appendix 1

Screening Questions	Yes	No	Remarks
▪ involuntary resettlement of people? (physical displacement and/or economic displacement)		X	(Please refer to the remarks on "Project Siting" above.)
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?		X	Such impacts are not anticipated considering the nature of the project.
▪ poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases (such as STIs and HIV/AIDS) from workers to local populations?		X	Same as above.
▪ creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?		X	Same as above.
▪ social conflicts if workers from other regions or countries are hired?		X	A large population influx is not anticipated as the physical works are relatively minor and dissipated nationwide. Any workers required from outside the project areas will be sensitized with local norms and cultural practices to minimize social conflicts.
▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		X	
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?	X		Only minimal risks are expected, given the scale of the physical works. The ECP includes measures to mitigate these risks.
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?	X		
▪ community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?	X		
▪ generation of solid waste and/or hazardous waste?	X		
▪ use of chemicals?		X	Such impact is not anticipated considering the nature of the project.
▪ generation of wastewater during construction or operation?		X	Same as above.

## Appendix 2 Checklist for Preliminary Climate Risk Screening

<b>Country/Project Title:</b>	Uzbekistan/Smart Water Management Improvement Project
<b>Sector:</b>	Water supply and sanitation
<b>Subsector:</b>	Water supply and sanitation
<b>Division/Department:</b>	CWUW/ CWRD

Screening Questions		Score	Remarks 13
<b>Location and Design of project</b>	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather-related events such as floods, droughts, storms, landslides?	0	
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc.)?	0	
<b>Materials and Maintenance</b>	Would weather, current, and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?	0	
	Would weather, current, and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?	0	
<b>Performance of project outputs</b>	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design lifetime?	0	

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1–4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

**Result of Initial Screening (Low, Medium, High): Low**

**Other Comments:**

**Prepared by:** Massimo Petrone, Senior Urban Development Specialist, CWRD/CWUW

<sup>13</sup> If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.



**Appendix 3  
Environmental Code of Practice  
Climate Smart Water Management Improvement Project**

The objective of this Environmental Code of Practice (ECP) is to address less significant environmental impacts and general physical works related impacts of proposed project implementation. The ECP will be provided as part of the guidelines for best operating practices and included in the procurement and contract documentation to be followed by the contractors for sustainable management of environmental issues. This ECP will be annexed to the general conditions of all contracts carried out under the project.

The list of ECP requirements for the Climate Smart Water Management Improvement Project is provided as follows:

- ECP 1: Waste Management
- ECP 2: Fuels and Hazardous Goods Management
- ECP 3: Water Resource Management
- ECP 4: Air Quality Management
- ECP 5: Noise and Vibration Management
- ECP 6: Road Transport and Road Traffic Management
- ECP 7: Worker-based Camp Management
- ECP 8: Community and Worker’s Health and Safety

**ECP 1: Waste Management**

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
General Waste	Health hazards and environmental impacts due to improper waste management practices	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>• Obtain applicable municipal waste management collection, transfer and disposal approvals/permits prior to the commencement of construction activities</li> <li>• Develop a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, food waste etc.) prior to commencing of physical works and submit to the Project Coordination Unit (PCU) for approval.</li> <li>• Minimize the production of waste materials by utilizing the 3R (Reduce, Recycle and Reuse) approach.</li> <li>• Segregate, reuse or recycle wastes, wherever practical.</li> <li>• Prohibit the burning of solid waste.</li> <li>• Organize the collection, storage and disposal of all wastes generated during physical works in an environmentally acceptable manner.</li> <li>• Collect and transport wastes to approved waste management disposal sites, to be agreed with local municipal authorities. Specialized waste management companies will be contracted as appropriate to ensure</li> </ul>

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
		<p>the collection of wastes from camps and temporary storage areas, and transportation to waste management disposal sites.</p> <ul style="list-style-type: none"> <li>• Cover vehicles transporting solid waste with tarpaulins or nets to prevent the spillage of wastes.</li> <li>• Provide containers for the storage and collection of solid waste at each worksite.</li> <li>• Train all involved personnel in waste management practices and procedures, emphasizing good housekeeping practices.</li> </ul>
Hazardous Waste	Health hazards and environmental impacts due to improper hazardous waste management practices	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>• Obtain applicable hazardous waste management collection, transfer and disposal approvals/permits prior to the commencement of construction activities</li> <li>• Collect, handle, store and transport all hazardous waste in accordance with appropriate regulations.</li> <li>• Collect and store hazardous wastes in specially designed and appropriately labeled sealed containers.</li> <li>• Store all hazardous wastes in banded areas and at a minimum distance of 100 meters from watercourses.</li> <li>• Arrange for the safe transport off-site of all hazardous wastes for reuse, recycling, treatment, or disposal at storage sites by licensed hazardous waste operators.</li> <li>• Make available Material Safety Data Sheets (MSDS) for hazardous materials on site during physical works.</li> <li>• Ensure all government legislation regarding hazardous waste is being followed, including the provision of a waste inventory to government and a waste management plan.</li> </ul>

#### ECP 2: Fuels and Hazardous Goods Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
Fuels and hazardous goods	Materials used in physical works have a potential to be a source of contamination. Improper storage and handling of fuels, lubricants, chemicals and hazardous goods/materials on-site, and potential spills from these goods may harm the environment or health of workers.	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>• Prepare spill control procedures and submit the plan to PCU for approval.</li> <li>• Train relevant contractor personnel in fuels handling and spill control procedures.</li> <li>• Store dangerous goods in banded areas on top of sealed plastic sheets, and at a</li> </ul>

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
		<p>minimum distance of 100 meters from watercourses.</p> <ul style="list-style-type: none"> <li>• Ensure that all refueling operations on working sites use absorbent pads and/or straw to minimize spills, which will be put in place prior to the commencement of refueling operations.</li> <li>• Reduce groundwater and surface water pollution risks and immediately remove any pollution.</li> <li>• Remove, store and treat as hazardous wastes, any contaminated soils and absorbents in accordance with the Hazardous Waste section above.</li> <li>• Cease works and inform responsible persons in case of spills, with works only recommencing after the elimination of pollution risks.</li> <li>• Implement refueling operations only with the correct equipment (i.e. nozzles of the appropriate size), and only with suitably trained and experienced refueling operators.</li> <li>• Provide personal protective equipment for appropriate personnel, including clothing, safety boots, helmets, masks, gloves, and goggles.</li> </ul>

### ECP 3: Water Resource Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
Hazardous materials and water	Water pollution from the storage, handling, and disposal of hazardous materials and waste, and accidental spillage.	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>• Follow the management guidelines and mitigation measures outlined in ECP 1 and ECP 2.</li> <li>• Minimize the generation of sediment, oil and grease, excess nutrients, organic matter, litter, debris, and any form of waste (including petroleum and chemical wastes). These substances must not enter waterways, storm water systems or underground aquifers.</li> </ul>
Discharge from physical works sites	During physical works, both surface and groundwater quality may deteriorate due to wastewater discharged from project sites and camps.	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>• Install temporary sediment basins, where appropriate, to capture sediment laden run-off from sites.</li> <li>• Stockpile materials away from drainage lines.</li> <li>• Prevent all solid and liquid wastes from entering waterways by ensuring environmentally compliant collection, storage, transportation, treatment and</li> </ul>

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
		<p>disposal to an approved waste disposal site or recycling depot.</p> <ul style="list-style-type: none"> <li>Wash out ready-mix concrete agitators and concrete handling equipment at washing facilities off site or approved banded washing facilities on site.</li> <li>Ensure that tires of construction vehicles are cleaned in washing bays (constructed at the exits of the physical works sites) to remove the mud from the wheels. This should be done for every exit of each vehicle.</li> </ul>

#### ECP 4: Air Quality Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
Construction vehicular traffic	Air quality can be adversely affected by vehicle exhaust emissions and the combustion of fuels.	<p>The Contractor should</p> <ul style="list-style-type: none"> <li>Fit vehicles with appropriate exhaust systems and emission control devices. Maintain these devices in good working condition.</li> <li>Operate vehicles in a fuel-efficient manner.</li> <li>Cover haulage vehicles.</li> <li>Impose speed limits on all vehicle movements at the worksite to reduce dust emissions.</li> <li>Control the movement of construction traffic.</li> <li>Service all vehicles regularly to minimize emissions.</li> <li>Transport materials to sites in off-peak hours when possible.</li> </ul>
Physical works machinery	Air quality can be adversely affected by vehicle exhaust emissions and the combustion of fuels.	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>Fit machinery with appropriate exhaust systems and emission control devices. Maintain these devices in good working condition in accordance with the specifications defined by their manufacturers to maximize combustion efficiency and minimize contaminant emissions. Proof of maintenance compliance will be required by the equipment suppliers and contractors and subcontractors.</li> </ul>
Physical works activities	Dust generation from physical works sites, material stockpiles and access roads impacts on the environment and can be a health hazard.	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>Water material stockpiles and access roads on an as-required basis to minimize the potential for environmental impacts due to dust.</li> <li>Restore disturbed areas as soon as practicable by vegetation/grass-turfing.</li> </ul>



Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
		<ul style="list-style-type: none"> <li>Establish adequate locations for the storage, mixing and loading of physical works materials, in a way that dust dispersion is prevented because of such operations.</li> </ul>

#### ECP 5: Noise and Vibration Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
Construction vehicular traffic	Noise quality will deteriorate due to vehicular traffic.	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>Maintain all vehicles in good working order in accordance with manufacture maintenance procedures.</li> <li>Ensure that all drivers comply with traffic codes, including maximum speed limits and maximum driving hours.</li> <li>Organize the loading and unloading of trucks and handling operations for the purpose of minimizing physical works noise on work sites.</li> </ul>
Physical works machinery	Noise and vibration may have an impact on people and property.	<p>The contractor will:</p> <ul style="list-style-type: none"> <li>Appropriately site all noise generating activities to avoid noise pollution to local residents.</li> <li>Maintain all equipment in good working order in accordance with manufacture maintenance procedures. Equipment suppliers and contractors will present proof of maintenance of their equipment.</li> <li>Install acoustic enclosures around generators to reduce noise levels as appropriate.</li> <li>Fit high efficiency mufflers to appropriate equipment.</li> </ul>
Physical works activity	Noise and vibration may have an impact on people and property.	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>Notify adjacent human receptors prior to any typical noise events outside of daylight hours.</li> <li>Employ best available work practices on-site to minimize occupational noise levels.</li> <li>Install temporary noise control barriers where appropriate.</li> <li>Notify affected people if major noisy activities will be undertaken e.g., unloading.</li> <li>Plan activities on site and deliveries to and from site to minimize impacts.</li> <li>Monitor noise and vibration and adjust physical works practices as required.</li> <li>Ensure access and egress is done in a way to avoid noise to local residents.</li> </ul>

## ECP 6: Road Transport and Road Traffic Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
Construction vehicular traffic	Increased road traffic due to construction vehicles will affect the movement of normal road traffic and the safety of road-users.	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>• Prepare and submit a traffic management plan covering the delivery of oversized loads and other site materials, and waste management and other vehicle movements, and obtain its approval before commencing work on any project component involved in traffic diversion and management.</li> <li>• Ensure that the traffic management plan results in uninterrupted traffic movements during physical works.</li> <li>• Provide signs at strategic locations of the roads.</li> <li>• Install and maintain a display board at each important road intersection on the roads to be used during delivery of oversized loads, which will clearly show the following information: <ul style="list-style-type: none"> <li>• Location: street name.</li> <li>• Date of delivery of oversized load.</li> <li>• Suggested detour route map.</li> <li>• Name and contact details of the Contractor.</li> </ul> </li> </ul>
	Accidents and spillage of fuels and chemicals.	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>• Restrict the transport of oversize loads.</li> <li>• Operate road traffic/transport vehicles, if possible, during nonpeak periods to minimize traffic disruptions.</li> <li>• Design and implement safety measures and an emergency plan to contain damages from accidental spills.</li> <li>• Designate special routes for hazardous materials transport, as necessary.</li> </ul>

## ECP 7: Worker-based Camp Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
Siting and location of camp (if applicable)	Camps are important locations that can have significant impacts, such as health and safety hazards, on the local resources and infrastructure of nearby communities	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>• Locate camps in areas which are acceptable from an environmental, cultural, and social perspective.</li> <li>• Consider the location of camps away from communities to avoid potential social conflicts in using the natural resources such as water, or to avoid possible adverse</li> </ul>

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
		<p>impacts of the camps on the surrounding communities.</p> <ul style="list-style-type: none"> <li>• Submit and obtain PCU approval of a detailed layout plan for the development of each camp showing the relative locations of all temporary buildings and facilities that are to be constructed, together with the locations of site roads, fuel storage areas, solid waste storage locations, and drainage facilities, prior to camp development.</li> <li>• Ensure that local authorities are informed of the establishment of camp facilities so as to maintain effective surveillance over public health, social, and security matters.</li> </ul>
Camp facilities.	Lack of proper infrastructure facilities, such as housing, water supply and sanitation facilities, will increase pressure on local services and generate substandard living standards and health hazards.	<p>The Contractor will provide the following facilities in the campsites:</p> <ul style="list-style-type: none"> <li>• Adequate temporary housing with required facilities for workers.</li> <li>• Safe and reliable water supplies.</li> <li>• Hygienic sanitary facilities and sewerage systems.</li> <li>• Treatment facilities for toilet and domestic wastes.</li> <li>• Storm water drainage facilities.</li> <li>• In-house community/common entertainment facilities, which however discourages local entertainment outlets where possible.</li> </ul>
Disposal of waste.	Management of wastes is crucial to minimize health and environmental impacts.	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>• Comply with the management and mitigation measures stipulated in ECP 1 and ECP 2.</li> <li>• Ensure proper collection, handling, storage, and disposal of solid wastes within the camps.</li> <li>• Establish waste collection, transportation and disposal systems with the human resources, equipment and vehicles required.</li> <li>• Ensure that all solid waste will be collected and removed from the camps and disposed of in approved waste management and disposal facilities.</li> </ul>
Health and hygiene.	Health issues from workers could spread diseases to local communities or place a burden on local health care systems.	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>• Provide adequate health care facilities within physical works sites.</li> <li>• Provide 24-hour first aid facilities and maintain medicine stocks.</li> <li>• Provide ambulance facilities for laborers during emergencies.</li> <li>• Implement health screening of laborers coming from outside areas.</li> </ul>

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
		<ul style="list-style-type: none"> <li>• Train workers in basic sanitation and health care issues and safety matters, and on the specific hazards of their work.</li> <li>• Provide HIV awareness programming, including STI (sexually transmitted infections)</li> <li>• And HIV information, education and communication for all workers on regular basis</li> <li>• Provide adequate drainage facilities throughout the camps to ensure that stagnant water bodies and puddles do not form.</li> <li>• Implement mandatory training sessions on best hygiene practices for all workers. Place display boards at strategic locations within camps containing messages on best hygienic practices.</li> </ul>
Safety	Inadequate safety facilities in camps may create security problems and fire hazards.	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>• Provide appropriate security personnel (police / home guard or private security guards) and enclosures to prevent unauthorized entry into camp areas.</li> <li>• Maintain a register of persons present in the camp at any given time.</li> <li>• Encourage the use of flameproof materials for the construction of labor housing / site offices, and ensure that these houses/rooms are of sound construction and capable of withstanding high winds and storms.</li> <li>• Provide appropriate types of firefighting equipment suitable for the camps.</li> <li>• Display emergency contact numbers clearly and prominently at strategic places in the camps.</li> <li>• Communicate the roles and responsibilities of laborers in case of emergencies in the monthly meetings with contractors.</li> </ul>
Site Restoration	Restoration of the camps to original condition requires the demolition of camps.	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>• Ensure that camp demolition works are designed and implemented in accordance with appropriate regulations.</li> <li>• Dismantle and remove from the site all camp facilities, including the perimeter fence and lockable gates, at the completion of the physical works.</li> <li>• Dismantle camps in phases.</li> <li>• Give prior notice to laborers before demolishing their camps/units.</li> </ul>

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
		<ul style="list-style-type: none"> <li>• Maintain noise levels within prescribed standards during demolition activities.</li> <li>• Hire specific contractors as necessary to demolish different structures to promote recycling or reuse of demolished material.</li> <li>• Reuse demolition debris to the maximum extent possible and dispose of debris at designated waste disposal sites.</li> <li>• Restore sites back to their original condition, or to another condition as formally agreed with landowners.</li> </ul>

#### ECP 8: Community and Worker's Health and Safety

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
Best Practices	Physical works may pose health and safety risks to surrounding communities, workers, and site visitors, leading to severe injuries and death. The workers and to a lesser extent, the local community, will be exposed to a number of (i) biophysical health risk factors, (e.g., noise, dust, chemicals, physical works material, solid waste, wastewater, vector transmitted diseases etc.), and (ii) risk factors resulting from human behavior (e.g., STD, HIV etc.) and (iii) road accidents from construction traffic.	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>• Implement suitable safety standards for all workers and site visitors which should not be less than international standards (e.g., International Labor Office guideline on 'Safety and Health in Construction'<sup>1</sup>; World Bank Group's 'Environmental Health and Safety General Guidelines, 2007'<sup>2</sup>) and the contractor's own national standards or statutory regulations,</li> <li>• Provide workers with a safe and healthy work environment, taking into account inherent risks of particular physical works activities and specific classes of hazards in the work areas.</li> <li>• Provide personal protection equipment (PPE) for workers, such as safety boots, helmets, masks, gloves, protective clothing, goggles, full-face eye shields, and ear protection.</li> <li>• Maintain the PPE properly.</li> <li>• Implement safety procedures, including the provision of information, training, and protective clothing to workers involved in hazardous operations.</li> <li>• Appoint a health and safety manager to look after the health and safety of the workers.</li> <li>• Inform communities through their local authorities responsible for health and security before the commencement of civil works and establishment of camps so as to maintain</li> </ul>

<sup>1</sup> [Safety and health in construction \(ilo.org\)](http://ilo.org)

<sup>2</sup> <https://www.ifc.org/wps/wcm/connect/29f5137d-6e17-4660-b1f9-02bf561935e5/Final%2B-%2BGeneral%2BEHS%2BGuidelines.pdf?MOD=AJPERES&CVID=nPtquVM>

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
		<p>effective surveillance over public health, social, and security matters.</p> <ul style="list-style-type: none"> <li>• Ensure a Grievance Redress Mechanism (GRM) is in place and operational.</li> </ul>
Accidents	Lack of first aid and health care facilities in the immediate vicinity will aggravate the health conditions of persons injured by accidents.	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>• Provide appropriately equipped first-aid stations and health care facilities to be easily accessible throughout the place of work and at camps.</li> <li>• Document and report occupational accidents, diseases, and incidents, and maintain statistics so that trends can be evaluated and preventative action taken where needed.</li> <li>• Prevent accidents, injury, and diseases arising from, associated with, or occurring in the course of work by minimizing, so far as reasonably practicable, the causes of hazards in a manner consistent with good international industry practice.</li> <li>• Identify potential hazards to workers, particularly those that may be life-threatening, and provide necessary preventive and protective measures.</li> <li>• Provide awareness training to contractors' drivers to strictly follow the driving rules.</li> <li>• Provide adequate lighting in physical works areas, along access routes, in camps, and along access roads (as needed).</li> </ul>
Worker-based Camp	Lack of proper infrastructure facilities, such as housing, water supply and sanitation facilities will increase pressure on the local services and generate substandard living standards and health hazards	<p>The Contractor will provide the following facilities in the campsites to improve health and hygienic conditions:</p> <ul style="list-style-type: none"> <li>• Adequate ventilation facilities.</li> <li>• Safe and reliable water supplies.</li> <li>• Hygienic sanitary facilities and sewerage systems.</li> <li>• Storm water drainage facilities.</li> <li>• Recreational and social facilities.</li> <li>• Safe storage facilities for petroleum and other chemicals.</li> <li>• Solid waste collection and disposal systems.</li> <li>• Training.</li> <li>• Security fences.</li> <li>• A sick bay and first aid facilities.</li> </ul>
Water and sanitation facilities at the physical works sites	Lack of water and sanitation facilities at physical works sites inconveniences workers and affects their personal hygiene.	<p>The contractor should provide:</p> <ul style="list-style-type: none"> <li>• Drinking water facilities.</li> <li>• Portable toilets at the physical works sites, which, daily, should be cleaned, and the sewage removed for proper disposal.</li> </ul>

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
Night Working	Lack of night-specific health and safety measures could put the safety of workers at risk.	<p>The contractor should provide:</p> <ul style="list-style-type: none"> <li>• Fixed lighting for all physical works areas and access routes.</li> <li>• Spare battery-operated lighting for all staff in case of emergency.</li> <li>• The operation of a 'buddy system' as far as possible where staff work in pairs.</li> <li>• Provision of mobile communication devices for all staff.</li> <li>• A sign in and sign out system to ensure that all staff leave the site at the end of each shift.</li> <li>• Specific training for night working.</li> </ul>
Training	Lack of awareness and basic knowledge of health care among affected communities and contractors' workforce, making them susceptible to potential diseases.	<p>The Contractor will:</p> <ul style="list-style-type: none"> <li>• Provide general training for all staff that consists of basic hazard awareness, site specific hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disasters, as appropriate.</li> <li>• Provide safety awareness training for local communities to increase project specific and general safety awareness amongst the local communities, as appropriate.</li> <li>• Train workers in basic sanitation and health care issues (e.g., how to avoid transmission of STI and HIV/AIDS).</li> <li>• Train all workers on the specific hazards in relation to their work.</li> </ul>